2016 Michigan Bridge Conference

Bridge Safety Inspection Workshop

Rich Kathrens
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March 22, 2016
Tentative Agenda – MORNING SESSION

• Information and Bridge Operations
• Training
• Program Requirements (MiSIM Chapter 1)
• Quality Assurance Quality Control (MiSIM Chapter 2)

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BREAK-----------------------------------------------

• FHWA Updates
• Routine Inspection Reporting Requirements (MiSIM Chapter 5)
• Inspection Frequency (MiSIM Chapter 3)
Tentative Agenda – AFTERNOON SESSION

• Safety

• Scour (MiSIM Chapter 6)

• Request for Action, RFA (Chapter 10)

----------------------------------------BREAK----------------------------------------

• Non-Destructive Evaluation
Doing Business

- Bridge Operations
  - Bus and Limousine Operators
  - Construction Field Services
  - Design
  - Development Services
  - Disadvantaged Business Enterprise (DBE) Certification
  - Environmental License Agreements

Permits
- Purchasing Services
- Research Services
- Tribal Governments
- Truckers
- Welcome Centers

Partnerships and Agreements
- Stewardship and Oversight Agreement - MDOT and FHWA
- Program Operations Manual
- ACEC Partnership Charter Agreement
- MDOT-ACEC Partnership Charter Award
Bridge Operations

The National Bridge Inspection Standards (NBIS) define that the state’s transportation department is responsible for establishing policies and procedures, completing quality assurance and quality control, and preparation and maintenance of the bridge inventory. The transportation department is also responsible for ensuring the completion of bridge inspections, reports, load ratings, and other requirements as established by the NBIS. MDOT's Operations Field Services Division and Design Division share the responsibilities for maintaining compliance with the NBIS.
Safety Inspection
The safety inspection program is managed within the Bridge Field Services Section of the Operations Field Services Division. The program ensures compliance with the National Bridge Inspection Standards (NBIS) through comprehensive performance of inspection timeliness verifications, annual FHWA NBIS M team leader quality assurance, and quality assurance Services also in accordance with the recognition.

Load Rating
The load rating program is administered by the Bridge Load Rating Unit. The program is responsible for ensuring that all bridges are load rated to verify the safe load capacity in accordance with the National Bridge Inspection Standards (NBIS). The Bridge Load Rating Unit performs capacity evaluations of complex bridges, truss bridges, movable bridges, and all other structures within the state-owned inventory. The area also serves as the technical consultant to FHWA, MDOT Divisions, regions, local agencies, and is responsible.

Bridge Management and Scoping
The bridge management and scoping program is operated by the Bridge Management Unit. The program is a balanced strategy made up of Replacement, Rehabilitation, Capital Preventive Maintenance (CPM) and Capital Scheduled Maintenance (CSM) that works to efficiently preserve bridges. The emphasis area of the scoping program is to address the needs of all structures of critical concern, and maintain the statewide inventory of bridges in good or fair condition.

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MDOT-Load-Rating@michigan.gov

Contact:
Linda Reed
ReedL@michigan.gov
Bridge Management Scoping
### 2016 MBC Workshop

**Resource Links**
- FHWA Bridge Preservation Guide
- FHWA Bridge Preservation Toolbox
- TARC Dashboards

**Manuals**
- Guides
- Project Estimating

- Bridge Cost Estimating Worksheet for CPM, Rehab, Replace, and CSM Projects
- Bridge Cost Estimate Worksheet - Key
- Life Cycle Cost Analysis Worksheet

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**Bridge Cost Estimate Worksheet - CPM, Rehab, Replace**

<table>
<thead>
<tr>
<th>REGION</th>
<th>ENGINEER</th>
<th>LOCATION</th>
<th>PRIMARY WORK ACTIVITY</th>
<th>COST CODE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW BRIDGE</td>
<td>WORK ACTIVITY</td>
<td>DECK AREA</td>
<td>DECK WM</td>
<td>QTY</td>
<td>UNIT COST</td>
</tr>
<tr>
<td>Multiple Span</td>
<td>Concrete</td>
<td>100</td>
<td>200</td>
<td>0.500</td>
<td>$200.00</td>
</tr>
<tr>
<td></td>
<td>Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW SUPERSTRUCTURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete</td>
<td>(includes removed deck super, new railing, and I.C. &amp; approach)</td>
<td>100</td>
<td>200</td>
<td>0.500</td>
<td>$200.00</td>
</tr>
<tr>
<td></td>
<td>(includes new superstructure cost)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WIDENING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Added joints</td>
<td>New width</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW DECK</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Includes removal cost deck &amp; tear railing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(includes traffic control &amp; approach)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Capital Scheduled Maintenance - Bridge CSM Cost Estimate Worksheet**

- Deck Surface
- Deck Substructure
- Superstructure
- Permanent Work
- Other Items

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**3/22/2016**
Load Rating

Forms

- Bridge Analysis Report
- Bridge Analysis Assumptions
- Bridge Analysis Summary
Load Rating

Forms

Guides and Advisories

- Michigan Structure Inventory and Appraisal of Bridges
- Corrugated Metal Pipe Analysis Spreadsheets (BA-2012-03)
- Guidance for the use of "Field Evaluation and Documented Engineering Judgment" Ratings (BA-2012-02)
- Modifications and Improvements to Load Rating and MBIS/MBRS (BA-2012-01)
- Local Agency Load Rating Prioritization and Coding (BA-2011-02)
- Load Rating Compliance with NBIS (BA-2010-03)
- Load Rating Gusset Plates on Non-Load-Path Redundant Steel Truss Bridges (BA-2009-01)
- Bridge Analysis Guide

Analysis Resources

- Bridge Analysis Spreadsheets
- Michigan Legal & Overload Vehicles
- Camelback Tutorial
- AASHTOWare Bridge Rating (BrR) Software
- AASHTOWare Bridge Rating (BrR) Tutorials
Load Rating

Resource Links
MDOT Bridge Advisories
MDOT Research Reports
MDOT Permit Unit
AASHTOWare Bridge Rating (BrR)
FHWA Load Rating
FHWA Policy and Guidance Center
AASHTO Manual for Bridge Evaluation
Bridge Safety Inspection

FHWA Compliance

Unassigned Safety Inspections
Inspection Timeliness Reports
National Bridge Inspection Program
Review

Manuals

Guides

MiBRIDGE Application Development
Inspection Questions
Forms

"If you think compliance is expensive – try non-compliance."
Bridge Safety Inspection

2016 MBC Workshop
Bridge Safety Inspection

- FHWA Compliance
- Manuals
- Guides
- MiBRIDGE Application Development
- Inspection Questions
  - Element Inspections
  - NBI Inspections
  - MiBRIDGE
- Forms

- Movable Bridge Inspection Checklist
- Efficient Element Calculation Worksheet
- Fracture Critical Inspection Report Structure Inventory and Appraisal
- Stream Cross-Section Report
- Damage Inspection Report
- Bridge Diving Inspection Report
- Scour Action Plan
- Bridge Safety Inspection Report
- Other Special Inspection Report
- Fatigue Sensitive Inspection Report
Bridge Safety Inspection

Resource Links
- MDOT Bridge Advisories
- Bridge Safety Report
- NBIS Recurrent Training
- NHI Training
- National Bridge Inspection Standards
- AASHTO Bridge Publications
- Federal Highway Administration
- Prequalified Service Vendors

Bridge Advisories
What are Bridge Advisories and who uses them?
The Bridge Advisory (BA) is intended to convey information to MDOT, local agencies, and contractors working for these agencies. The intent of the advisories is to provide guidance and share information on bridge safety, bridge inspection, bridge management, and bridge load rating issues.

Bridge Operations
The National Bridge Inspection Standards (NBIS) define that the state's transportation department is responsible for establishing policies and procedures, completing quality assurance and quality control, and preparation and maintenance of the bridge inventory. The transportation department is also responsible for ensuring the completion of bridge inspections, reports, load ratings, and other requirements as established by the NBIS. MDOT's Operations Field Services Division and Design Division share the responsibilities for maintaining compliance with the NBIS.

Receive E-mail Updates
- MiBRIDGE Updates
- Bridge Advisories
Bridge Safety Inspection

Topics

<table>
<thead>
<tr>
<th>Bridge Advisories</th>
<th>3177 Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>MiBRIDGE Updates</td>
<td>2071 Subscribers</td>
</tr>
</tbody>
</table>

The Evolution of Long Distance Communication
Email Delivery Stats

<table>
<thead>
<tr>
<th>Minutes</th>
<th>Cumulative Attempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>97%</td>
</tr>
<tr>
<td>5</td>
<td>98%</td>
</tr>
<tr>
<td>10</td>
<td>98%</td>
</tr>
<tr>
<td>30</td>
<td>99%</td>
</tr>
<tr>
<td>60</td>
<td>99%</td>
</tr>
<tr>
<td>120</td>
<td>99%</td>
</tr>
</tbody>
</table>

Delivery Metrics - Details

- **2,059** Total Sent
- **2,005 (97%)** Delivered
- **23 (1%)** Pending
- **31 (2%)** Bounced
- **1 (0%)** Unsubscribed

Bulletin Analytics

- **686** Total Opens
- **451 (22%)** Unique Opens
- **1** Total Clicks
- **1 (0%)** Unique Clicks
- **13** # of Links
Bridge Safety Inspection

Resource Links
MDOT Bridge Advisories
Bridge Safety Report
NBIS Recurrent Training
NHI Training
National Bridge Inspection Standards
AASHTO Bridge Publications
Federal Highway Administration
Prequalified Service Vendors

Prequalified Service Vendors by Classification
As of March 14, 2016

<table>
<thead>
<tr>
<th>Service Unqualification Classification</th>
<th>Vendor</th>
<th>State</th>
<th>Phone</th>
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<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>AECOM GREAT LAKES, INC.</td>
<td>MI</td>
<td>616-574-40</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>ALFRED BENESCH &amp; COMPANY</td>
<td>MI</td>
<td>817-822-16</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>ANDERSON, ECKSTEIN AND WESTRICK, INC.</td>
<td>MI</td>
<td>503-726-17</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>AYRES ASSOCIATES, INC. OF MICHIGAN</td>
<td>MI</td>
<td>715-334-11</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>BERGMANN ASSOCIATES ARCHITECTS, ENGINEERS, LANDSCAPE ARCHITECTS &amp; SURVEYORS, LTD.</td>
<td>WI</td>
<td>617-222-67</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>CH2M HILL MICHIGAN, INC.</td>
<td>MI</td>
<td>616-574-40</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>COLLINS ENGINEERS, INC.</td>
<td>IL</td>
<td>312-380-41</td>
</tr>
<tr>
<td>Design - Bridge: Safety Inspection</td>
<td>DL MICHIGAN, INC.</td>
<td>MI</td>
<td>716-564-70</td>
</tr>
</tbody>
</table>
Created MiBRIDGE homepage:  www.Michigan.gov/BridgeInspect
Current Backlog submitted in Serena

- **APP012090** MIBridge: Fix Item 43B Parameters to include all Structure Types listed in MDOT S&I. This should be similar parameters as shown in TMS.
- **APP012078** MIBridge: Add Tables and Update Procedures for Bridge History RFA data.
- **APP012072** MIBridge: Fix Column for Item 41 on Report Assignment Dashboard.
- **APP012060** MIBridge: SI&A Type & Dimensions Not Displaying Data for Railroad over Highway.
Implementation of “Data Tables”

- Standard Format for All Bridge Lists
- Allow sorting of every column heading
- Search feature at bottom of every column
Implementation of “Data Tables” (Cont.)

| Other Non-Highway Structures (V, Plaza) | 15 |
| Additional Bridge Inventory Information |  |
| Posted Structures | 20 |
| Closed Structures | 13 |
| Fracture Critical Structures | 79 |
| Scour Critical Structures | 402 |
| Scheduled/Under Construction (S, G) | 62 |

Structure Inventory Summary

<table>
<thead>
<tr>
<th>Select</th>
<th>Struct. Nbr.</th>
<th>Bridge ID</th>
<th>Facility Carried</th>
<th>Features Intersected</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>1875</td>
<td>19119043000S140</td>
<td>I-69 SB</td>
<td>I-96BL GRAND RIV GRAND RIV Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>1876</td>
<td>19119043000S150</td>
<td>I-66 NB</td>
<td>I-96BL GRAND RIV GRAND RIV Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2286</td>
<td>23123072200B010</td>
<td>M-100</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2304</td>
<td>23123092200B020</td>
<td>M-99 NB</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2305</td>
<td>23123092200B030</td>
<td>M-99 SN</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2315</td>
<td>23123152200B013</td>
<td>I-96 EB</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2316</td>
<td>23123152200B014</td>
<td>I-96 WB</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>2317</td>
<td>23123152200B020</td>
<td>I-96 SB TO I-96 EB</td>
<td>GRAND RIVER GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>3890</td>
<td>33133011100K010</td>
<td>M-99 NB</td>
<td>GTW RR &amp; GRAN GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>3891</td>
<td>33133011100K020</td>
<td>M-99 SB</td>
<td>GTW RR &amp; GRAN GRAND RIVER Univers</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>3892</td>
<td>33133014400B010</td>
<td>M-143 E MICH AVE GRAND RIVER Univers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>3785</td>
<td>33133061100B010</td>
<td>M-43 EB (SAGINAW GRAND RIVER Univers</td>
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</tr>
<tr>
<td>✔️</td>
<td>3790</td>
<td>33133061100B020</td>
<td>M-43 WB (OAKLAND GRAND RIVER Univers</td>
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<tr>
<td>✔️</td>
<td>3970</td>
<td>34134032200B010</td>
<td>M-66</td>
<td>GRAND RIVER GRAND RIVER Grand RIV</td>
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<tr>
<td>✔️</td>
<td>3978</td>
<td>34134044400B013</td>
<td>I-96 EB</td>
<td>GRAND RIVER GRAND RIVER Grand RIV</td>
<td></td>
</tr>
<tr>
<td>✔️</td>
<td>3979</td>
<td>34134044400B014</td>
<td>I-96 WB</td>
<td>GRAND RIVER GRAND RIVER Grand RIV</td>
<td></td>
</tr>
</tbody>
</table>

Search Str | Search Bridge ID | Search Facility | Grand River | Search |
Showing 1 to 52 of 52 entries (filtered from 5,951 total entries) Show 100 entries
Implementation of “Data Tables” (Cont.)

<table>
<thead>
<tr>
<th>Structure Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail Road Structures (X)</td>
<td>126</td>
</tr>
<tr>
<td>Pedestrian Structures (P)</td>
<td>181</td>
</tr>
<tr>
<td>Other Non-Highway Structures (V, Plaza)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Additional Bridge Inventory Information</strong></td>
<td></td>
</tr>
<tr>
<td>Posted Structures</td>
<td>20</td>
</tr>
<tr>
<td>Closed Structures</td>
<td>13</td>
</tr>
<tr>
<td>Fracture Critical Structures</td>
<td>79</td>
</tr>
<tr>
<td>Scour Critical Structures</td>
<td>402</td>
</tr>
<tr>
<td>Scheduled/Under Construction (S, G)</td>
<td>62</td>
</tr>
</tbody>
</table>

**Structure Inventory Summary**

<table>
<thead>
<tr>
<th>Select</th>
<th>Struct. Nbr.</th>
<th>Bridge ID</th>
<th>Facility Carried</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>409</td>
<td>06106111000B040</td>
<td>I-75 NB</td>
</tr>
<tr>
<td></td>
<td>411</td>
<td>061061110000C030</td>
<td>I-75 NB</td>
</tr>
<tr>
<td></td>
<td>413</td>
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<td>ARMS</td>
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<td></td>
<td>415</td>
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<td>I-75 NB &amp; RAMP</td>
</tr>
<tr>
<td></td>
<td>417</td>
<td>061061110000C090</td>
<td>MID BRIDGE</td>
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<td>419</td>
<td>061061110000C110</td>
<td>WELL</td>
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<td>423</td>
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<td>597</td>
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<td>SQUAD</td>
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<td>612</td>
<td>09109035000B000</td>
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<tr>
<td></td>
<td>624</td>
<td>09109035000CR011</td>
<td>GTW RIVER</td>
</tr>
<tr>
<td></td>
<td>628</td>
<td>09109035000S011</td>
<td>I-75 NB</td>
</tr>
<tr>
<td></td>
<td>642</td>
<td>09109035000S150</td>
<td>I-75 NB</td>
</tr>
</tbody>
</table>

Showing 1 to 135 of 135 entries (filtered from 5,955 total entries)
Any Questions?
TRAINING Opportunities

NHI Classes:
MDOT Partners with ACEC of Michigan to offer NHI instructor led (ILT) classes twice a year related to National Bridge Inspection Standards (NBIS).

There are numerous Web-based training opportunities on NHI’s website that are directly related to the Management and Inspection of Bridges.
## TRAINING: Summary of NHI Classes (ILT)

<table>
<thead>
<tr>
<th>NHI Class</th>
<th>Title</th>
<th>Length (days)</th>
<th>Credit (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>130054</td>
<td>Engineering Concepts for Bridge Inseptors</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>130055</td>
<td>Safety Inspecton of Inservice Bridges</td>
<td>10</td>
<td>N/A</td>
</tr>
<tr>
<td>130053</td>
<td>Bridge Inspecton Refresher</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>130078</td>
<td>Fracture Critical Inspection Techniques for Bridges</td>
<td>3.5</td>
<td>24</td>
</tr>
<tr>
<td>130091</td>
<td>Underwater Bridge Inspection</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>130091B</td>
<td>Underwater Bridge Repair, Rehabilitation, and Countermeasures</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>130099A</td>
<td>Bridge Inspection Nondestructive Evaluation Seminar (BINS)</td>
<td>2 days</td>
<td>13</td>
</tr>
<tr>
<td>135046</td>
<td>Stream Stability &amp; Scour at Highway Bridges</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>135047</td>
<td>Stream Stability &amp; Scour at Highway Bridges for Bridge Inspectors</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>135048</td>
<td>Countermeasure Design for Bridge Scour and Stream Instability</td>
<td>2.5</td>
<td>15</td>
</tr>
<tr>
<td>130110</td>
<td>Tunnel Inspection (New)</td>
<td>5</td>
<td>32</td>
</tr>
</tbody>
</table>
## TRAINING: Summary of NHI Classes (WEB Based)

<table>
<thead>
<tr>
<th>NHI Class</th>
<th>Title</th>
<th>Credit (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>130101</td>
<td>Introduction to Safety Inspection of In-Service Bridges</td>
<td>14</td>
</tr>
<tr>
<td>130101A</td>
<td>Prerequisite Assessment for Safety Inspection of In-Service Bridges</td>
<td>1</td>
</tr>
<tr>
<td>135085</td>
<td>Plan of Action (POA) for Scour Critical Bridges</td>
<td>1</td>
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<tr>
<td>135086</td>
<td>Stream Stability Factors and Concepts (Prerequisite)</td>
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<tr>
<td>135087</td>
<td>Scour at Highway Bridges: Concepts and Definitions (Prereq.)</td>
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<tr>
<td>135091</td>
<td>Basic Hydraulic Principles Review</td>
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<tr>
<td>130106A</td>
<td>Bridge Preservation Fundamentals</td>
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<tr>
<td>130106B</td>
<td>Establishing a Bridge Preservation Program</td>
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<td>130106C</td>
<td>Communication Strategies for Bridge Preservation</td>
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<tr>
<td>130109A</td>
<td>Bridge Management Fundamentals (New)</td>
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</tr>
<tr>
<td>130109B</td>
<td>Performance-Based Management of Highway Bridges (New)</td>
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</table>
The **NHI 130053 Bridge Inspection Refresher** course is scheduled for **January 19, 2016** and will be hosted by MDOT in Lansing, MI. There are a few seats still available. Please contact MDOT Training Coordinator, Ginger Moore (517) 322-6792 or at [MooreG@michigan.gov](mailto:MooreG@michigan.gov) to register.

The pre-conference workshop for the **Michigan Bridge Conference** will count towards bridge safety inspection recurrent training hours. The workshop will be held on **March 22, 2016** in Lansing, MI. Please click on this link to learn more details about the workshop and how to register: [2016 Michigan Bridge Inspection Workshop](#)

The **MDOT Structure Inspection Alignment Meeting** is scheduled for **April 26, 2016** to **April 27, 2016** located in Big Rapids, MI. The first eight hours of this meeting is devoted to Bridge Safety Inspection topics. Please contact Rich Kathrens ([Kathrens@michigan.gov](mailto:Kathrens@michigan.gov)) or Andrew Bouvy ([BouvyA@michigan.gov](mailto:BouvyA@michigan.gov)) to verify the availability for attending this meeting.
Course Description

Tunnel Safety Inspection

PROGRAM AREA: Structures
COURSE NUMBER: FHWA-NHI-130110

Start Date: 4/04/2016       End Date: 4/08/2016       Location: LANSING, MI

Local Coordinator: Ginger Moore (517) 322-6792

Availability: No Public Seats Available

Please contact the Local Coordinator to enroll in this session.

The light at the end of the tunnel is not an illusion.

The tunnel is...
TRAINING

Bridge Safety Inspection ANNUALLY

3 NHI Training Classes  18 Hrs/Class
Structure Alignment Meeting  8 Hrs

TOTAL of about **62 Hours** of Opportunities per Year

Future themes for the Pre-Conference Workshop

**DESIGN, MAINTENANCE, CONSTRUCTION**
Questions?

Costello: I'm asking you--who's on first?
Abbott: That's the man's name.
Costello: That's who's name?
Abbott: Yes.
Guidance for meeting the Requirements of the NBIS and Michigan Bridge Safety Inspection Procedures

13 Chapters with over 300 Pages
Chapter 5, Routine Inspection Procedures, is nearly 200 Pages
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<td>Non-NBI Structures</td>
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<td>Chapter 13</td>
<td>Safety</td>
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Program Manager: Delegation of NBIS Responsibilities

FHWA Michigan Division

MICHIGAN BRIDGE INSPECTION PROGRAM MANAGER

MDOT Bridge Inspection Operations Field Services Division
- 650.307 Bridge Inspection Organization
- 650.309 Qualifications (Team Leaders/Divers)
- 650.311 Inspection Frequency
- 650.313 Inspection Procedures
- 650.315 Bridge Inventory (Update Inspection Data)

MDOT Bridge Management Design Division
- 650.307 Bridge Inspection Organization
- 650.309 Qualifications (Load Rating)
- 650.313 Inspection Procedures (Load Rating)
- 650.313 Inspection Procedures (Scour Criticality)
- 650.315 Bridge Inventory (SI&A, Load Posting)
## Operations Field Services, Structures Management

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Burns, P.E.</td>
<td>Structures Management Engineer</td>
<td><a href="mailto:BurnsE@michigan.gov">BurnsE@michigan.gov</a></td>
<td>(517) 322-3326</td>
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<td>Rich Kathrens</td>
<td>Bridge Safety Inspection Program</td>
<td><a href="mailto:KathrensR@michigan.gov">KathrensR@michigan.gov</a></td>
<td>(517) 749-4274</td>
</tr>
<tr>
<td>Andrew Bouvy</td>
<td>Fracture Critical and Movable Bridge Inspection</td>
<td><a href="mailto:BouvyA@Michigan.gov">BouvyA@Michigan.gov</a></td>
<td>(517) 322-6092</td>
</tr>
<tr>
<td>Kelly Davis</td>
<td>Fatigue Sensitive, Big Bridge Inspection</td>
<td><a href="mailto:DavisK2@michigan.gov">DavisK2@michigan.gov</a></td>
<td>(517) 322-6796</td>
</tr>
</tbody>
</table>
Design Division, Bridge Management

Beckie Curtis, P.E.  Bridge Management Engineer
CurtisR4@michigan.gov  (517) 449-5243

Creightyn McMunn  Load Rating Engineer
McMunnC@michigan.gov  (517) 322-1372

Jamie Hunt  Bridge Inventory Specialist & Contract manager
HuntJ10@michigan.gov  (517) 335-1898
Design Division, Bridge Management

Bridge/Data Management

Bob Kelley
Bridge Management Engineer
KelleyR@michigan.gov
(517) 373-0734

Craig Russell
Bridge Inventory “Specialist”
RusselC@michigan.gov
(517) 373-0744

Ron Jacobs
Bridge Inventory Specialist
JacobsR@michigan.gov
(517) 373-0880
Emergency and Statewide Bridge Repairs

Christopher Idusuyi  
Statewide Bridge Engineer  
IdusuyiC@michigan.gov  
(517) 322-3398

Roger Wiseman  
Statewide Bridge Repair Crew  
WisemanR@michigan.gov  
(517) 242-3233
Operations Field Services, Structures Management

Statewide Bridge Maintenance & Region Support

Jason DeRuyver
Region Support Engineer
DeRuyverJ@michigan.gov (517) 322-3342

Aaron Porter
Reachall Crew
PorterA@michigan.gov (517) 242-5788
Bridge Safety Inspection: Implementation Team

**STATE OWNED STRUCTURES**
- MDOT Region Bridge Engineers
- MDOT Bridge Authority Engineers
- MDOT Big Bridge Committee
- Michigan DNR

**LOCAL AGENCY OWNED STRUCTURES**
- MDOT Local Agency Programs
- County Engineers
- City / Village Managers

**INSPECTION & LOAD RATING**
- MDOT Bridge Inspection Team Leaders
- MDOT Movable Bridge/Fracture Critical Engineer
- MDOT Big Bridge/Fatigue Sensitive Engineer
- MDOT Load Rating Engineers
- MDOT Scoping Engineers
- Prequalified Engineering Consultants

- County/City Bridge Inspection Team Leaders
- Engineering Consultants
BRIDGE OWNER responsibilities:

- Ensure **Qualified** personnel is completing the inspections and Load Ratings

- Ensure inspections are scheduled in a **Timely** manner

- Verify that **Quality Control** measures are implemented and followed

- Know their **Inventory**. Understand the structure types and the unique characteristics that may require additional inspections
TEAM LEADER responsibilities:

- Responsible to submit proof of qualifications and quality control plan to the Bridge Owner.

- Responsible for planning, preparing and performing structure inspections in accordance with NBIS (see Chapter 5, MiSIM). Must be on-site during inspection activities.

- Responsible for entering inspection report data into MiB\textsuperscript{RIDGE}.

- Responsible to notify Bridge Owner immediately of any Critical Findings.
LOAD RATING ENGINEER responsibilities:

• Perform Load Ratings in accordance with the NBIS, AASHTO Manual of Bridge Evaluation, and Michigan specific policies

• All load rating calculations must be completed by or checked by a registered professional engineer.

• Immediately notify bridge owner with any reduction of load capacity that causes a load posting to be installed or lowered.

• Responsible to submit load rating calculations to the Bridge Owner so they can be kept in the “Bridge File”
Program Requirements: TEAM LEADER Qualifications

**COMPLETE**

NHI 130055: Safety Inspection of In-Service Bridges

*or*  
FHWA Approved Comprehensive Bridge Inspection Course

.. and meet one of the following:

1. Be a registered professional engineer;
2. Have (5) years of bridge inspection experience (Note this has to be documented);
3. Have all of the following:
   a) Bachelor's degree in engineering, successfully passed the Engineering and Surveying Fundamentals of Engineering exam, and
   b) (2) years of bridge inspection experience;
4. Be certified as a Level III or IV Bridge Safety Inspector under National Certification in Engineering Technologies (NICET);
5. Have all of the following:
   a) Associate’s degree in engineering or engineering technology and,
   b) (4) years of bridge inspection experience
Effective March 22, 2016

Bridge Safety Inspection
Revised Recurrent Training Requirement

MUST Complete NHI Class 130053 Bridge Inspection Refresher Training every 3 years to be qualified as a “Team Leader”

Only the NHI 130055 Safety Inspection of In-Service Bridges will be accepted as a substitute, no other classes will be allowed.

TRUE or FALSE
Bridge Safety Inspection
Recurrent Training Requirements

Completing one of the following activities within a 5 year period

- NHI 130053 Bridge Inspection Refresher
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges
- NHI-130091A Underwater Bridge Inspection

Or

- 24 Hours of approved bridge inspection training
Qualification Verification

ANNUAL REVIEW of Qualifications  (April 1 – March 31)

- Check that 2-Week course has been completed
- Check registered P.E. or verify years of experience
- If it has been more than 5 years since 2-Week Course, verify recurrent training

5 Year time Period is measured from the month a Team Leader completes inspection to 5 years prior.

i.e. Inspection completed 1/2016, then training requirements must be met during the period from 1/2011 to 1/2016.
Team Leaders must meet the above qualifications and, if applicable, the recurrent training requirements at the time they complete an inspection of a structure meeting the NBIS definition of a bridge. **Qualification verification is determined by reviewing the classes or training completed within the five years prior to the month the Team Leader completed the inspection.** A team leader will be allowed a grace period of 6 months from when their qualifications have expired to complete the necessary recurrent training requirements. However, until the necessary recurrent training has been completed the Team Leader must have at least 50% of the inspections completed during this period checked by an independent Team Leader. The Team Leader is responsible to keep documentation on file showing completion of the additional quality control activities during this grace period.

Team Leaders are required to provide documentation to the Bridge Owner showing they meet the qualification of a Team Leader. These efforts are intended to ensure bridge safety.
Thank you!!