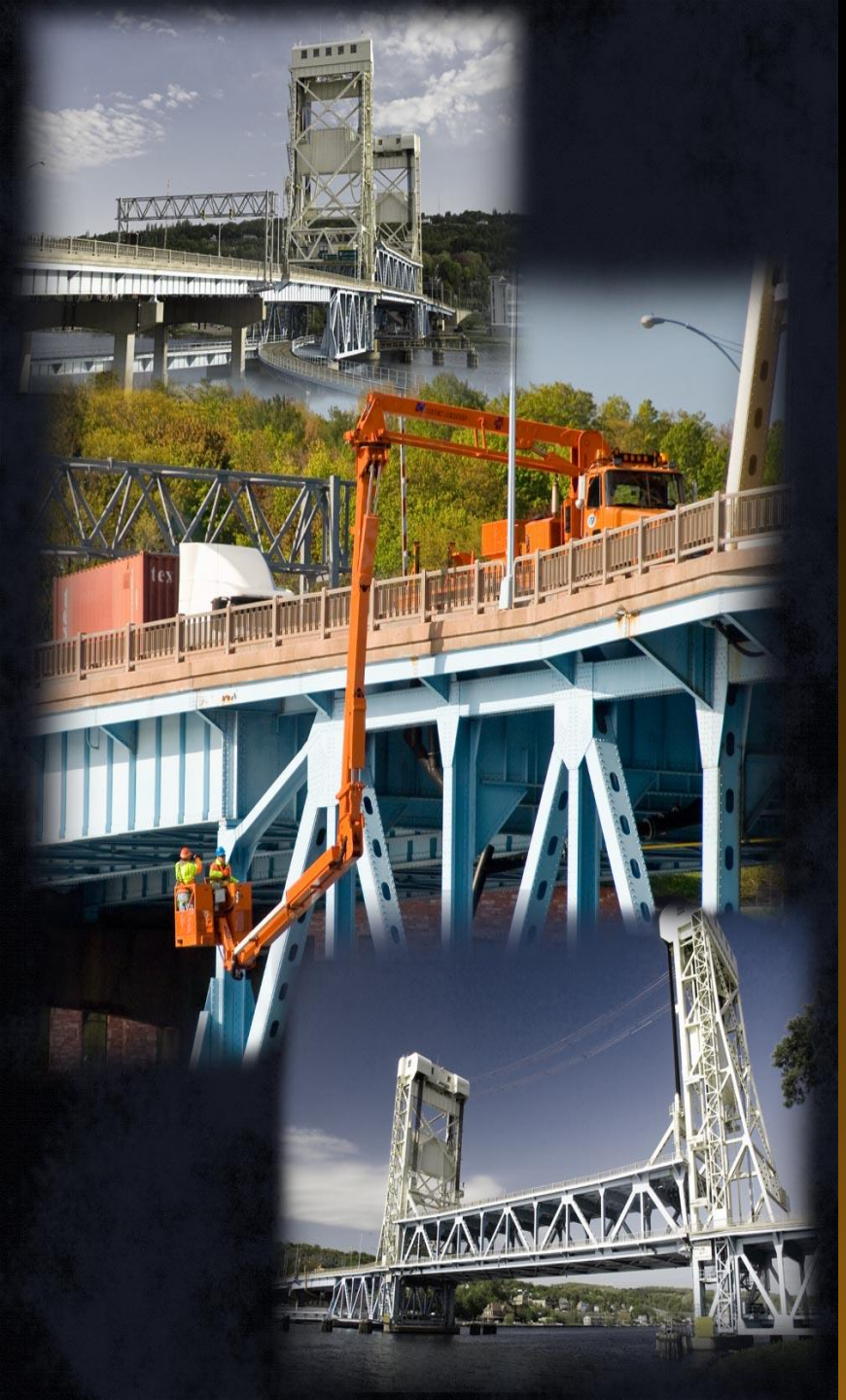
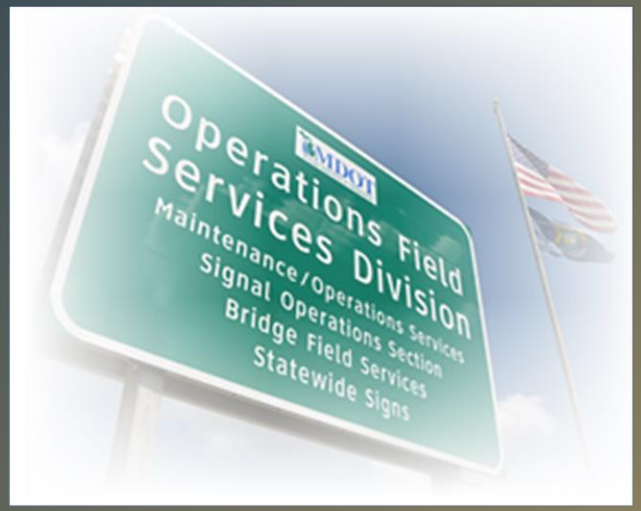


2016 Michigan Bridge Conference

Bridge Safety Inspection Workshop



Rich Kathrens
MDOT Bridge Safety Inspection Engineer
kathrens@michigan.gov
March 22, 2016

Tentative Agenda – MORNING SESSION

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

----------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

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- Doing Business

MDOT / DOING BUSINESS

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

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Doing Business

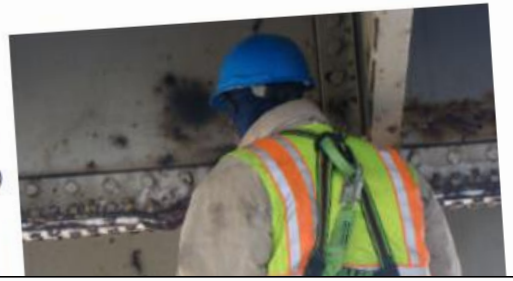
MDOT / DOING BUSINESS / BRIDGE OPERATIONS

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 qu quality assura Services also procedures, r as the recogn



Contact:
Rich Kathrens
517-749-4274
MDOT-BridgeInspection@michigan.gov

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 inve The area also serves as the technical consultant to FHWA, MDOT Divisions, regions, local agencies, and is respons

Contact:
Creightyn McMunn
517-335-1923
MDOT-Load-Rating@michigan.gov

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.

Contact:
Linda Reed
ReedL@michigan.gov

Resource Links

FHWA Bridge Preservation Guide
FHWA Bridge Preservation Toolbox
TAMC Dashboards

Manuals

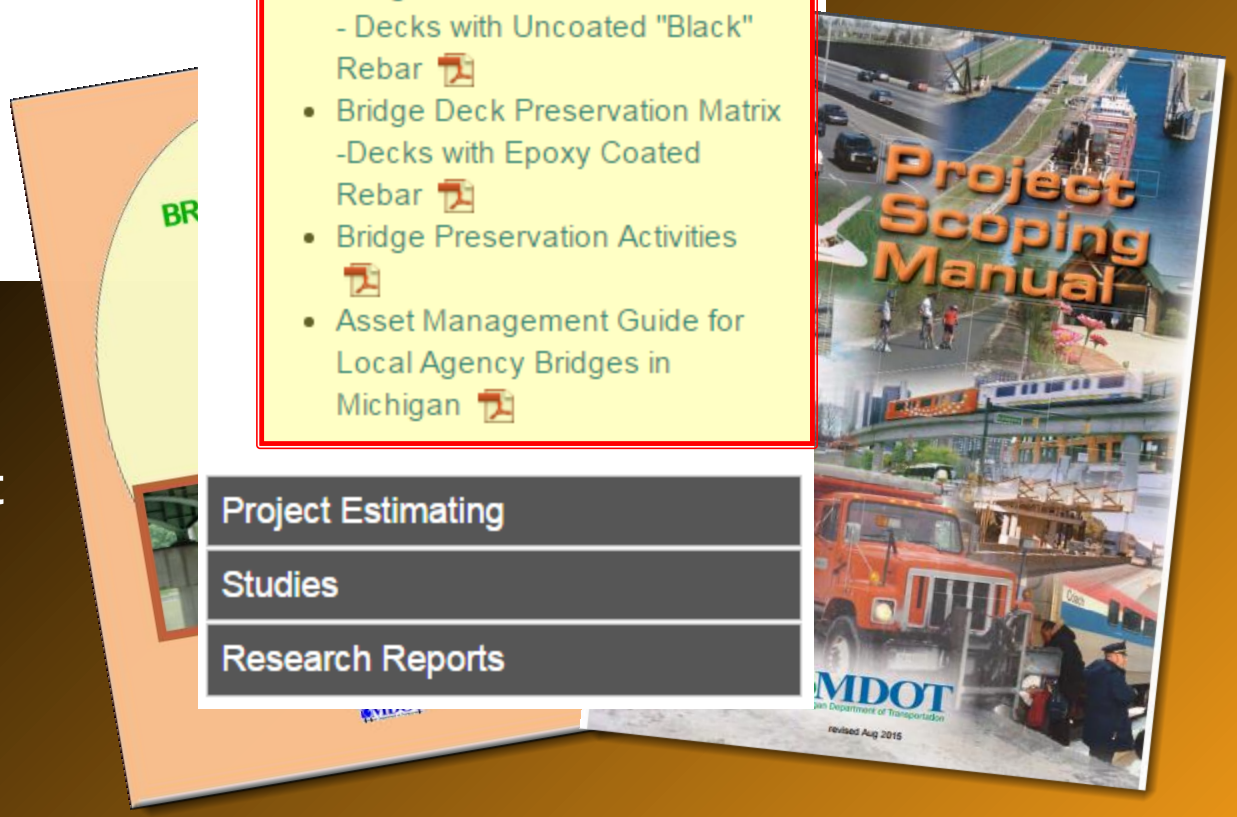
Guides

- Coding and Managing Bridges for Scour Vulnerability
- Bridge Deck Preservation Matrix - Decks with Uncoated "Black" Rebar
- Bridge Deck Preservation Matrix -Decks with Epoxy Coated Rebar
- Bridge Preservation Activities
- Asset Management Guide for Local Agency Bridges in Michigan

Project Estimating

Studies

Research Reports



Bridge Management Scoping

Resource Links

FHWA Bridge Preservation Guide

FHWA Bridge Preservation Toolbox

TAMC Dashboards

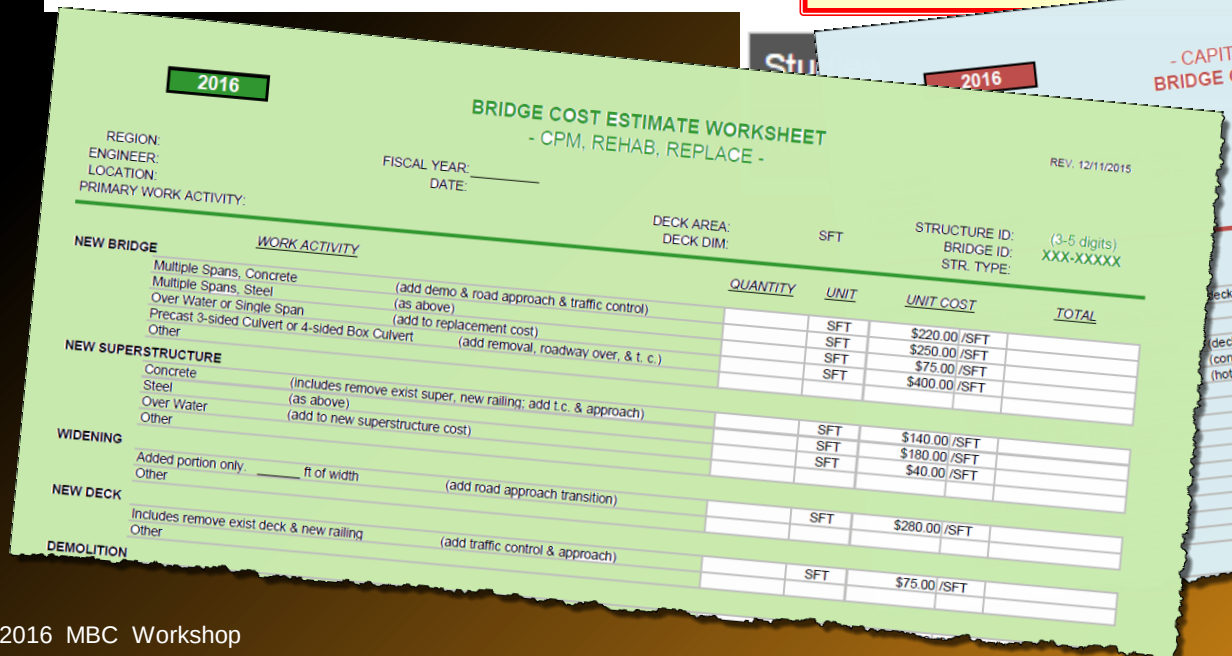
Bridge Management and Inspection System
MiBRIDGE
MICHIGAN TRANSPORTATION ASSET MANAGEMENT COUNCIL

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


2016

BRIDGE COST ESTIMATE WORKSHEET
- CPM, REHAB, REPLACE -

REV. 12/11/2015

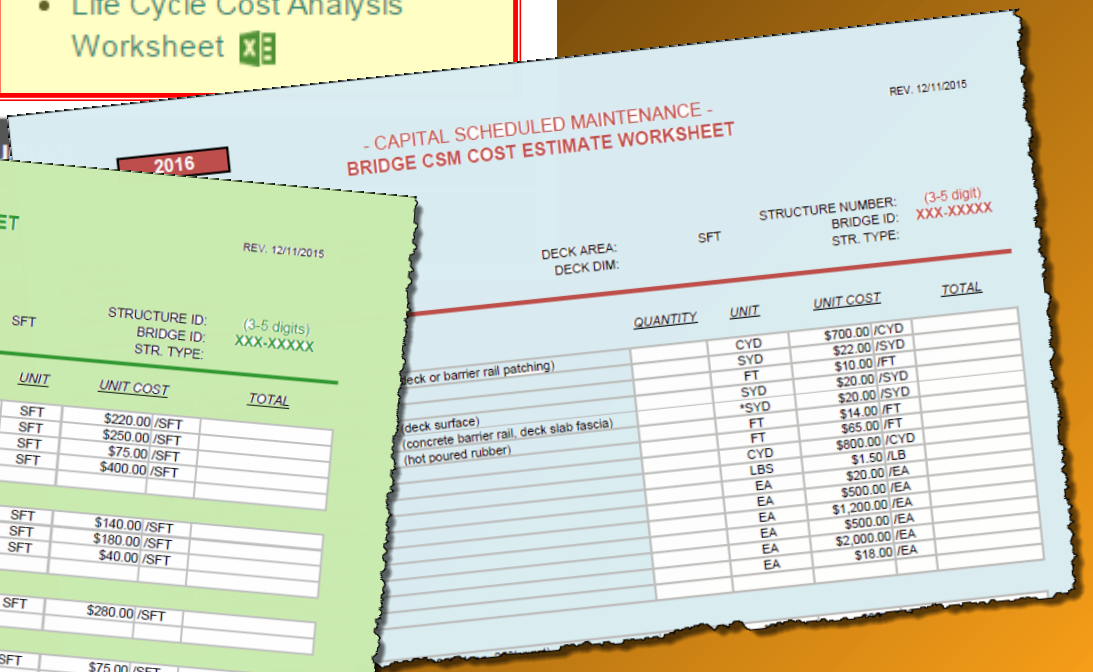
REGION:
ENGINEER:
LOCATION:
PRIMARY WORK ACTIVITY:

FISCAL YEAR:
DATE:

DECK AREA: SFT
DECK DIM:

STRUCTURE ID: (3-5 digits)
BRIDGE ID: XXX-XXXXX
STR. TYPE:

	WORK ACTIVITY		QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE	Multiple Spans, Concrete	(add demo & road approach & traffic control)		SFT	$220.00 /SFT	
	Multiple Spans, Steel	(as above)		SFT	$250.00 /SFT	
	Over Water or Single Span	(add to replacement cost)		SFT	$75.00 /SFT	
	Precast 3-sided Culvert or 4-sided Box Culvert	(add removal, roadway over, & t. c.)		SFT	$400.00 /SFT	
	Other					
NEW SUPERSTRUCTURE	Concrete			SFT	$140.00 /SFT	
	Steel	(includes remove exist super, new railing; add t.c. & approach)		SFT	$180.00 /SFT	
	Over Water	(as above)		SFT	$40.00 /SFT	
	Other	(add to new superstructure cost)				
WIDENING	Added portion only, _____ ft of width			SFT	$280.00 /SFT	
	Other	(add road approach transition)				
NEW DECK	Includes remove exist deck & new railing			SFT	$75.00 /SFT	
	Other	(add traffic control & approach)				
DEMOLITION						


2016

- CAPITAL SCHEDULED MAINTENANCE -
BRIDGE CSM COST ESTIMATE WORKSHEET

REV. 12/11/2015

DECK AREA: SFT
DECK DIM:

STRUCTURE NUMBER: (3-5 digit)
BRIDGE ID: XXX-XXXXX
STR. TYPE:

	QUANTITY	UNIT	UNIT COST	TOTAL
eck or barrier rail patching)		CYD	$700.00 /CYD	
		SYD	$22.00 /SYD	
		FT	$10.00 /FT	
deck surface)		SYD	$20.00 /SYD	
concrete barrier rail, deck slab fascia)		*SYD	$20.00 /SYD	
hot poured rubber)		FT	$14.00 /FT	
		FT	$65.00 /FT	
		CYD	$800.00 /CYD	
		LBS	$1.50 /LB	
		EA	$20.00 /EA	
		EA	$500.00 /EA	
		EA	$1,200.00 /EA	
		EA	$500.00 /EA	
		EA	$2,000.00 /EA	
		EA	$18.00 /EA	

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

Forms

Guides and Advisories

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

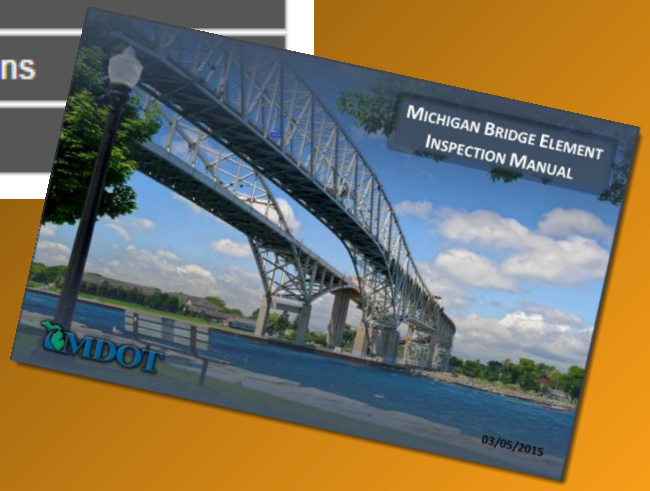
Bridge Management and Inspection System
MiBRIDGE

Center for Technology & Training

Bridge Safety Inspection

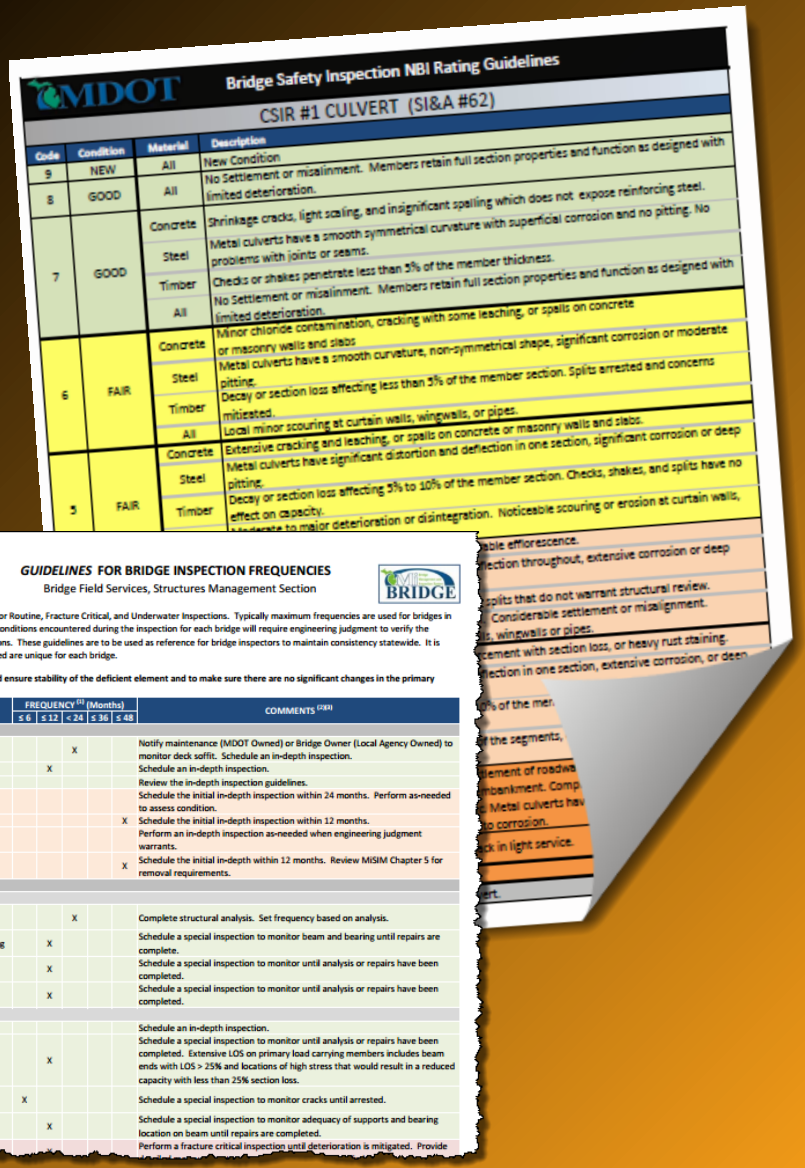
- FHWA Compliance
  - Unassigned Safety Inspections
  - Inspection Timeliness Reports
  - National Bridge Inspection Program Review
- Manuals
- Guides
- MiBRIDGE Application Development
- Inspection Questions
- Forms

- FHWA Compliance
- Manuals
  - Michigan Structure Inspection Manual
  - Michigan Bridge Element Inspection Manual
  - FHWA Bridge Inspector's Reference Manual
- Guides
- MiBRIDGE Application Development
- Inspection Questions
- Forms



Bridge Safety Inspection

- FHWA Compliance
- Manuals
- Guides
  - RFA Priority Level Guidelines
  - Coding and Managing Bridges for Scour Vulnerability
  - Michigan Structure Inventory and Appraisal of Bridges
  - MDOT NBI Rating Guidelines
  - Guidelines for Bridge Inspection Frequencies
- MiBRIDGE Application Development
- Inspection Questions
- Forms



MDOT Bridge Safety Inspection NBI Rating Guidelines

CSIR #1 CULVERT (SI&A #62)

Code	Condition	Material	Description
9	NEW	All	New Condition
8	GOOD	All	No Settlement or misalinment. Members retain full section properties and function as designed with limited deterioration.
7	GOOD	Concrete	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel.
		Steel	Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting. No problems with joints or seams.
		Timber	Checks or shakes penetrate less than 5% of the member thickness.
		All	No Settlement or misalinment. Members retain full section properties and function as designed with limited deterioration.
6	FAIR	Concrete	Minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs
		Steel	Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
		Timber	Decay or section loss affecting less than 5% of the member section. Splits arrested and concerns mitigated.
		All	Local minor scouring at curtain walls, wingwalls, or pipes.
5	FAIR	Concrete	Extensive cracking and leaching, or spalls on concrete or masonry walls and slabs.
		Steel	Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.
		Timber	Decay or section loss affecting 5% to 10% of the member section. Checks, shakes, and splits have no effect on capacity.
			Moderate to major deterioration or disintegration. Noticeable scouring or erosion at curtain walls,

GUIDELINES FOR BRIDGE INSPECTION FREQUENCIES

Bridge Field Services, Structures Management Section

The NBIS sets the maximum frequencies for Routine, Fracture Critical, and Underwater Inspections. Typically maximum frequencies are used for bridges in fair to good condition. Evaluation of the conditions encountered during the inspection for each bridge will require engineering judgment to verify the appropriate frequency for future inspections. These guidelines are to be used as reference for bridge inspectors to maintain consistency statewide. It is recognized that the conditions encountered are unique for each bridge.

Reduced frequencies are set to verify and ensure stability of the deficient element and to make sure there are no significant changes in the primary elements between inspections.

	COMPONENT OR BRIDGE TYPE	FREQUENCY[1] (Months) ≤ 6	≤ 12	< 24	≤ 36	≤ 48	COMMENTS [2][3]
	DECK (SI&A Item 58)						
ROUTINE	Item 58 or 58B NBI rating = 4			X			Notify maintenance (MDOT Owned) or Bridge Owner (Local Agency Owned) to monitor deck soffit. Schedule an in-depth inspection.
	Item 58 or 58B NBI rating = 3		X				Schedule an in-depth inspection.
	Decks containing false decking						Review the in-depth inspection guidelines.
IN-DEPTH	Item 58 or 58B NBI rating = 6						Schedule the initial in-depth inspection within 24 months. Perform as-needed to assess condition.
	Item 58 or 58B NBI rating = 4					X	Schedule the initial in-depth inspection within 12 months.
	False decking protects < 75% of span						Perform an in-depth inspection as-needed when engineering judgment warrants.
	False decking protects ≥ 75% of span					X	Schedule the initial in-depth within 12 months. Review MiSIM Chapter 5 for removal requirements.
	SUPERSTRUCTURE (SI&A Item 59)						
	CONCRETE PRIMARY MEMBERS						
ROUTINE	Main rebar or prestressing strands exposed with section loss			X			Complete structural analysis. Set frequency based on analysis.
	Spall on beam end with loss of bearing		X				Schedule a special inspection to monitor beam and bearing until repairs are complete.
	Longitudinal cracks in beam		X				Schedule a special inspection to monitor until analysis or repairs have been completed.
	Diagonal shear cracks in beam		X				Schedule a special inspection to monitor until analysis or repairs have been completed.
	STEEL PRIMARY MEMBERS						
	Section loss (amount unknown)						Schedule an in-depth inspection.
	Extensive loss of section		X				Schedule a special inspection to monitor until analysis or repairs have been completed. Extensive LOS on primary load carrying members includes beam ends with LOS > 25% and locations of high stress that would result in a reduced capacity with less than 25% section loss.
	Fatigue cracks in redundant primary member	X					Schedule a special inspection to monitor cracks until arrested.
	Temporary supports under beams		X				Schedule a special inspection to monitor adequacy of supports and bearing location on beam until repairs are completed.
	Extensive loss of section						Perform a fracture critical inspection until deterioration is mitigated. Provide

Bridge Safety Inspection

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

- FHWA Compliance
- Manuals
- Guides
- MiBRIDGE Application Development
- Inspection Questions
- 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

MiBRIDGE – Bridge Management and Inspection System

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.

govDELIVERY

Receive E-mail Updates

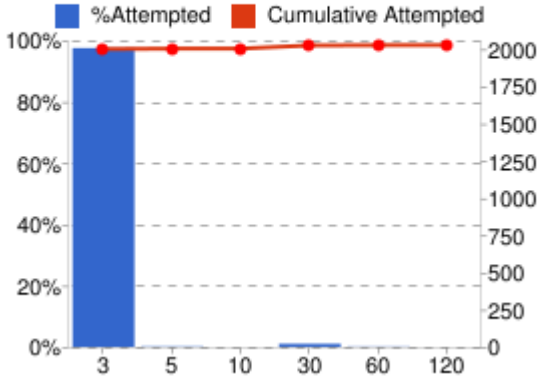
- MiBRIDGE Updates
- Bridge Advisories

Bridge Safety Inspection

govDELIVERY

Topics		
	Bridge Advisories	3177 Subscribers
	MiBRIDGE Updates	2071 Subscribers

Email Delivery Stats



Minutes	Cumulative Attempted
3	97%
5	98%
10	98%
30	99%
60	99%
120	99%

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

MiBRIDGE Bridge Management and Inspection System

PREQUALIFIED SERVICE VENDORS BY CLASSIFICATION

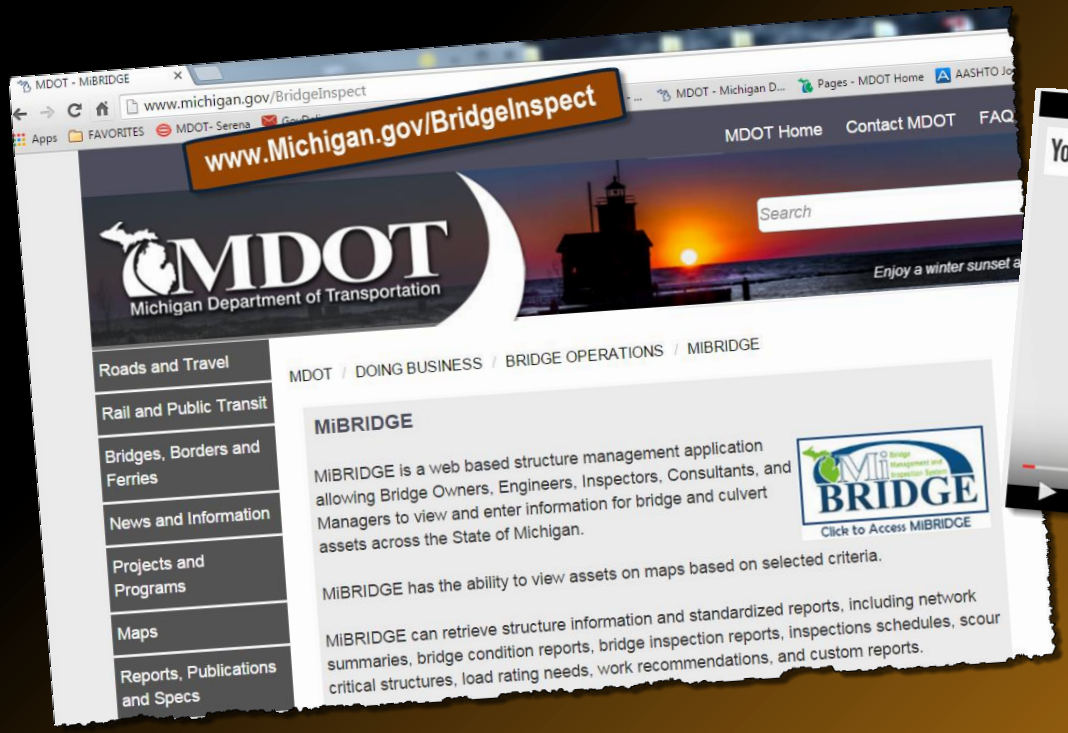
Design - Bridges: Safety Inspection

As of March 14, 2016

(DBE) Disadvantaged Business Enterprise

Service Prequalification Classification	Vendor	State	Phone
Design - Bridges: Safety Inspection	AECOM GREAT LAKES, INC.	MI	616-574-85
Design - Bridges: Safety Inspection	ALFRED BENESCH & COMPANY	MI	517-482-16
Design - Bridges: Safety Inspection	ANDERSON, ECKSTEIN AND WESTRICK, INC.	MI	586-726-12
Design - Bridges: Safety Inspection	AYRES ASSOCIATES, INC., OF MICHIGAN	WI	715-834-31
Design - Bridges: Safety Inspection	BERGMANN ASSOCIATES, ARCHITECTS, ENGINEERS, LANDSCAPE ARCHITECTS &SURVEYORS, D.P	MI	517-272-98
Design - Bridges: Safety Inspection	CH2M HILL MICHIGAN, INC.	WI	414-847-03
Design - Bridges: Safety Inspection	COLLINS ENGINEERS, INC.	IL	312-236-51

Created MiBRIDGE homepage: ww.Michigan.gov/BridgeInspect



Current Backlog submitted in Serena

SERENA BUSINESS MANAGER

Application | Defects | Data Model

ID Search...

Favorites

- MiBIRDGE Releases
- MiBRIDGE Status Reports
- Quick Links
- RAMP Complete
- All MiBRIDGE tickets
- Open MiBRIDGE tickets (

Open MiBRIDGE tickets

Use Editable G

Now showing APP Request 1 - 70 of 70 Sorted by: Project (Hierarchy), Submit Date, Application Name, Item Id

Application Request Project

Item Id	Application Acronym	Summary	Detailed Description	Status
APP012090	MIBridge	Fix Item 43B Parameters to include all Structure Types listed in MDOT SI&A	Fix Item 43B (Design) Parameters to include all Structure Types listed in MDOT SI&A. THis should be similar parameters as shown in TMS	Dev. Lea Review
APP012079	MIBridge	Fix Printing of Fatigue Sensitive Report	Users receive a message that no data exists when trying to print the fatigue sensitive report. Please fix the pdf output functionality for the older fatigue sensitive reports.	Dev. Lea Review
APP012078	MIBridge	Add Tables and Update Procedures for Bridge History RFA data	For the functionality to work when moving a structure to history, two new tables and the procedures need to be updated.	Dev. Lea Review
APP012072	MIBridge	Fix Column for Item 41 on Report Assignment Dashboard	The data for the Item 41 column does not show up when the user selects UW, FCIR, FSIR, or OS types of inspections. This will also need to be fixed on the export to excel option.	Dev. Lea Review
APP012060	MIBridge	SI&A Type & Dimensions Not Displaying Data for Railroad over Highway	The SI&A Type & Dimension tab for "X" structures (Railway over Highway) is not displaying data on the screen. However, the information is still in the database as the printed SI&A contains the information. This	Verify Requirem

Implementation of “Data Tables”

Other Non-Highway Structures (V, Plaza)	3
Additional Bridge Inventory Information	
Posted Structures	1
Closed Structures	0
Fracture Critical Structures	14
Scour Critical Structures	5
Scheduled/Under Construction (S, G)	1

Highway included in NBI	5
Non NBI Structures (<20, RR, Ped, etc.)	0
Serious/Critical (3 or less)	**0**
Highway included in NBI	0
Non NBI Structures (<20, RR, Ped, etc.)	0
Unrated Structures	**0**
Highway included in NBI	0
Non NBI Structures (<20, RR, Ped, etc.)	0

NBI Condition - Goals Summary	Pct.
*Good/Fair (5 or Greater)	87.5%
Freeway	84.0%
Non-Freeway	93.3%
*Poor/Serious/Critical (4 or Less)	12.5%
Freeway	16.0%
Non-Freeway	6.7%
*Poor NHS Deck Area	30.0%

*Applies ONLY to Highway Structures > 20'

Structure Inventory Summary

Open ▼

Select	Struct. Nbr.	Bridge ID	Facility Carried	Features Intersected	Region	NBI	Fwy	Insp. Date	Fract Crit	Scour Crit	Deck Rtg	Surf Rtg	Deck Botm Rtg	Super Str Rtg	Sub-Str Rtg	Culv. Rtg	SD FO	MDOT Suff Rtg	Item 41	Item
	586	09109032000B010	M-13 & M-84	E CHANNEL SAGI	Bay	Y	N	04/23/2015	Y	3	7	6	7	4	5	N	SD	36.4	A	
	646	09109042000B010	M-25	SAGINAW RIVER &	Bay	Y	N	04/22/2015	Y	3	6	7	6	6	5	N		77.5	A	
	778	11111013000B050	I-94 BL	ST JOSEPH RIVER	Southwest	Y	N	10/19/2015	Y	5	7	6	7	7	5	N		78.5	A	
	880	11111053000B010	M-63	ST JOSEPH RIVER	Southwest	Y	N	09/21/2015	Y	7	5	5	6	6	5	N	FO	58.2	A	
	1471	15115012000B010	US-31	PINE RIVER	North	Y	N	05/06/2015	Y	8	7	7	6	6	6	N	FO	59.8	A	
	1501	16116081000B030	US-23	CHEBOYGAN RIVE	North	Y	N	05/06/2015	Y	3	7	6	7	6	5	N	FO	60.7	A	
	3380	31131012000B010	US-41&M-26,RR(ABI	PORTAGE LAKE &	Superior	Y	N	06/01/2015	Y	5	6	6	6	5	6	N		45.9	A	
	4764	41141027000B014	I-196 WB	GRAND R,I-296,SC	Grand	Y	Y	05/28/2015	Y	8	5	5	5	7	4	N	SD	49.8	A	
	12868	41141131000S201	US-131 NB	GRANDVILLE AVE	Grand	Y	Y	12/09/2014	N	N	8	8	8	8	8	N		94.2	A	
	12869	41141131000S202	US-131 SB	GRANDVILLE AVE	Grand	Y	Y	12/09/2014	N	N	7	8	7	7	8	N		88.9	A	
	6436	51151011000B010	US-31	MANISTEE RIVER	North	Y	N	05/15/2015	Y	3	5	5	6	5	6	N	FO	49.6	A	
	6717	54154014000B010	US-131 SB	MUSKEGON RIVE	Grand	Y	Y	10/07/2015	N	7	8	8	8	8	8	N		97.4	A	
	6718	54154014000B020	US-131 NB	MUSKEGON RIVE	Grand	Y	Y	10/07/2015	N	7	8	8	8	8	8	N		97.4	A	
	7173	58158151000R030	I-75	CONRAIL ,RAISIN	University	Y	Y	07/28/2015	Y	3	7	7	6	6	5	N		68.8	A	
	7959	63163102000Z010	PLAZA	I-696	Metro	N	Y	06/16/2015	N	N	N	N	N	6	7	N		-2	A	
	7960	63163102000Z020	PLAZA	I-696	Metro	N	Y	06/16/2015	N	N	N	N	N	6	6	N		-2	A	
	Search Str	Search Bridge ID	Search Facility	Search Features In	Search Reg	Sear	Sear	Search Inspe	Search	Search	Search	Search	Search	Search	Search	Search	Search	Search	Search	Se

Showing 1 to 45 of 45 entries Show 100 ▼ entries

First Previous 1 Ne

- 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

Highway included in Non NBI Structures

Serious/Critical (3 or

Highway included in Non NBI Structures

Unrated Structures

Highway included in Non NBI Structures

Structure Inventory Summary

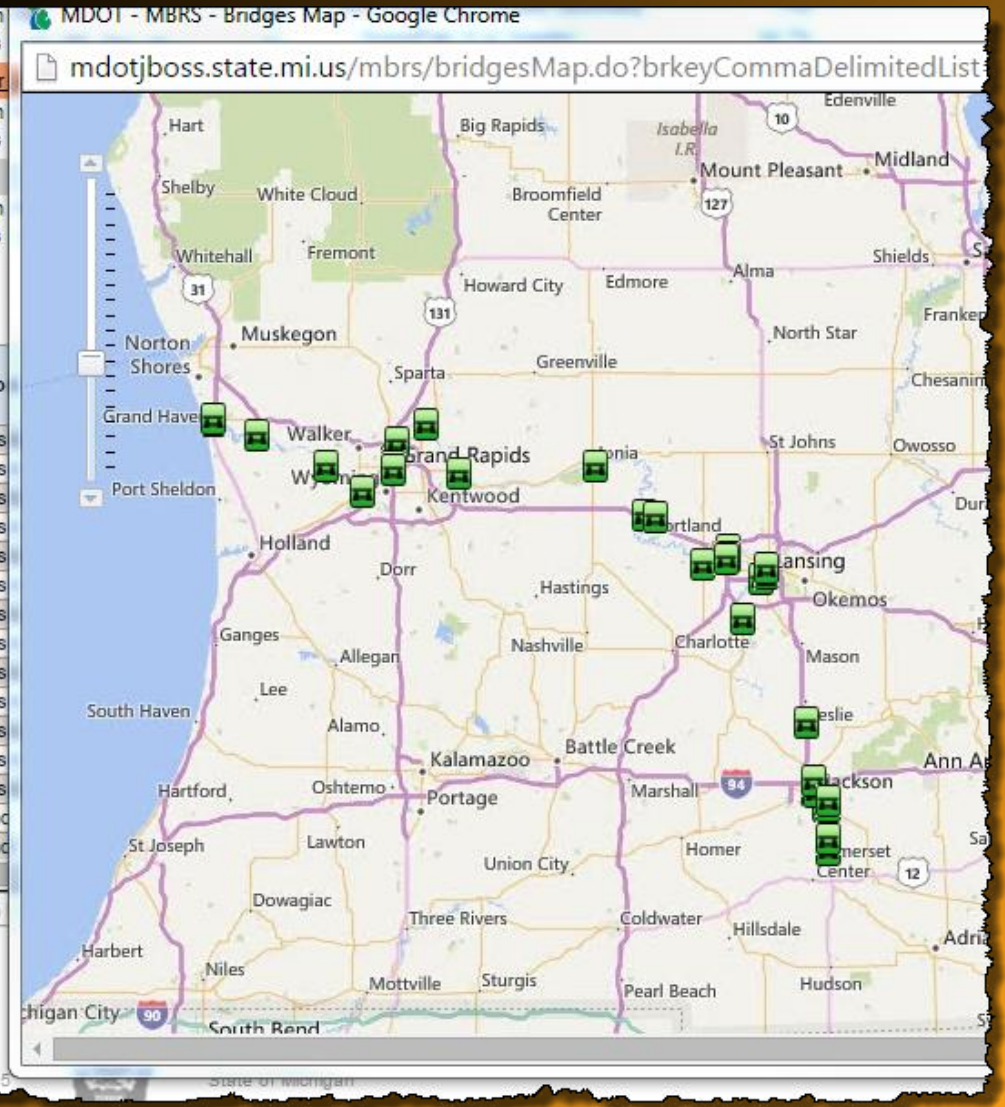
Open ▼

Select	Struct. Nbr.	Bridge ID	Facility Carried	Features Intersected	Regio
☑	1875	19119043000S140	I-69 SB	I-96BL GRAND RI	Univers
☑	1876	19119043000S150	I-69 NB	I-96BL GRAND RI	Univers
☑	2286	23123072000B010	M-100	GRAND RIVER	Univers
☑	2304	23123092000B020	M-99 NB	GRAND RIVER	Univers
☑	2305	23123092000B030	M-99 SB	GRAND RIVER	Univers
☑	2315	23123152000B013	I-96 EB	GRAND RIVER	Univers
☑	2316	23123152000B014	I-96 WB	GRAND RIVER	Univers
☑	2317	23123152000B020	I-69 SB TO I-96 EB	GRAND RIVER	Univers
☑	3690	33133011000R010	M-99 NB	GTW RR & GRAND	Univers
☑	3691	33133011000R020	M-99 SB	GTW RR & GRAND	Univers
☑	3693	33133014000B010	M-143 E MICH AVE	GRAND RIVER	Univers
☑	3789	33133061000B010	M-43 EB (SAGINAW	GRAND RIVER	Univers
☑	3790	33133061000B020	M-43 WB (OAKLAND	GRAND RIVER	Univers
☑	3970	34134032000B010	M-66	GRAND RIVER	Grand
☑	3978	34134044000B013	I-96 EB	GRAND RIVER & M	Grand
☑	3979	34134044000B014	I-96 WB	GRAND RIVER & M	
	Search Str	Search Bridge ID	Search Facility	Grand River	Search

Showing 1 to 52 of 52 entries (filtered from 5,955 total entries) Show 100 ▼ entries

Export Data to EXCEL

Copyright © 2001 - 2015



Implementation of “Data Tables” (Cont.)

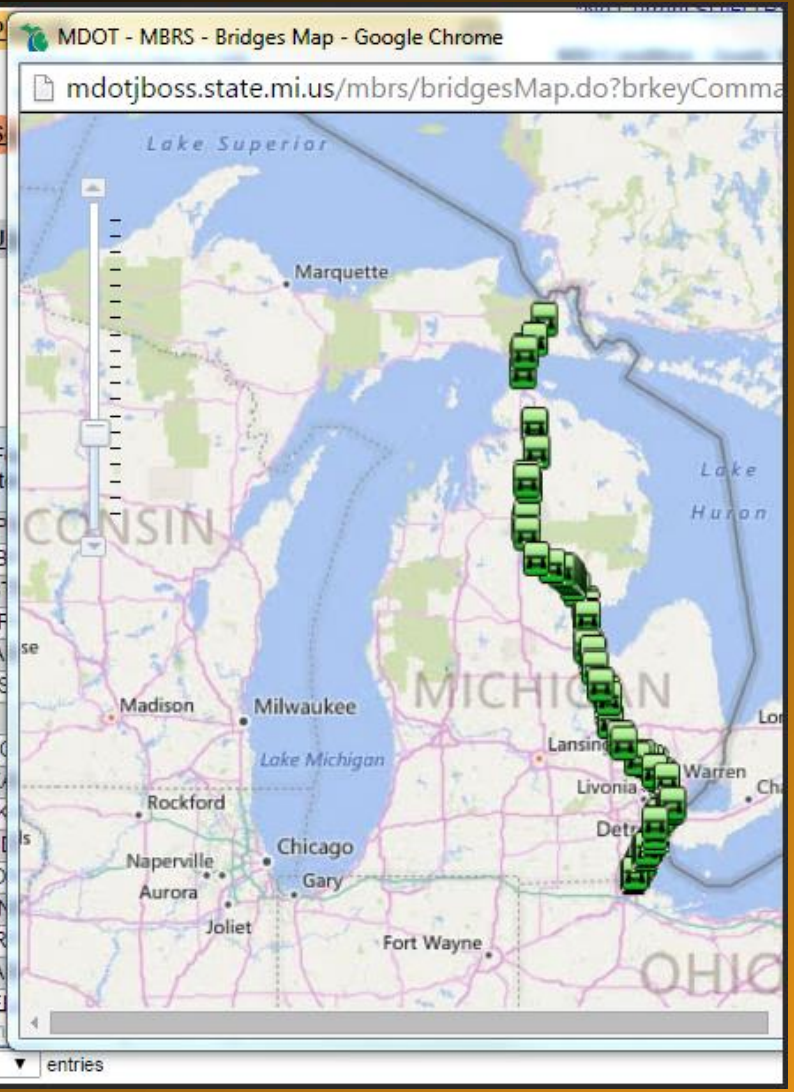
Rail Road Structures (X)	126
Pedestrian Structures (P)	181
Other Non-Highway Structures (V, Plaza)	15
Additional Bridge Inventory Information	
Posted Structures	20
Closed Structures	13
Fracture Critical Structures	79
Scour Critical Structures	402
Scheduled/Under Construction (S, G)	62

Structure Inventory Summary

Open ▼

Select	Struct. Nbr.	Bridge ID	Facility Carried	F Int
☑	408	06106111000B040	I-75 NB	S BR P
☑	411	06106111000C030	I-75 NB	BR S B
☑	413	06106111000C050	I-75 NB	ARMST
☑	415	06106111000C070	I-75 NB & RAMP	MID BR
☑	417	06106111000C090	I-75 NB	N BRA
☑	419	06106111000C110	I-75 NB	WELLS
☑	423	06106111000S040	I-75 NB	M-61
☑	597	09109034000B011	I-75 NB	SQUA
☑	612	09109035000B060	I-75 NB	KAWK
☑	613	09109035000B070	I-75 NB	N BR K
☑	614	09109035000B080	I-75 NB	TEBO
☑	615	09109035000B090	I-75 NB	PINCO
☑	616	09109035000B100	I-75 NB	SAGAN
☑	624	09109035000R011	I-75 NB	GTW R
☑	626	09109035000S011	I-75 NB	MIDLA
☑	642	09109035000S160	I-75 NB	WHEE
	Search Str	Search Bridge ID	I-75 NB	Search

Showing 1 to 135 of 135 entries (filtered from 5,955 total entries) Show All ▼ 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)

NHI Classes - Instructor Led (ILT)

NHI Class	Title	Length (days)	Credit (hrs)
130054	Engineering Concepts for Bridge Inseptors	5	15
130055	Safety Inspeciton of Inservice Bridges	10	N/A
130053	Bridge Inspeciton Refresher	3	24
130078	Fracture Critial Inspection Techniques for Bridges	3.5	24
130091	Underwater Bridge Inspection	4	24
130091B	Underwater Bridge Repair, Rehabilitation, and Countermeasures	2	14
130099A	Bridge Inspection Nondestructive Evaluation Seminar (BINS)	2 days	13
135046	Stream Stability & Scour at Highway Bridges	3	20
135047	Stream Stability & Scour at Highway Bridges for Bridge Inspectors	1	6
135048	Countermeasure Design for Bridge Scour and Stream Instability	2.5	15
130110	Tunnel Inspection (New)	5	32

TRAINING: Summary of NHI Classes (WEB Based)

NHI Classes - Web-Based

NHI Class	Title	Credit (hrs)
130101	Introduction to Safety Inspeciton of In-Sevicve Bridges	14
130101A	Prerequisite Assessment for Safeity Inspeciton of In-Service Bridges	1
135085	Plan of Action (POA) for Scour Critical Bridges	1
135086	Stream Stability Factors and Concepts (Prerequisite)	1
135087	Scour at Highway Bridges: Concepts and Defininitions (Prereq.)	1
135091	Basic Hydraulic Principles Review	1
130106A	Bridge Preservation Fundamentals	5
130106B	Establishing a Bridge Preservation Program	4
130106C	Communication Strategies for Bridge Preservation	3
130109A	Bridge Management Fundamentals (New)	4
130109B	Performance-Based Managemnt of Highway Bridges (New)	4

GOVDELIVERY

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 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) or Andrew Bouvy (BouvyA@michigan.gov) to verify the availability for attending this meeting.

Course Description

Tunnel Safety Inspection

PROGRAM AREA: Structures

COURSE NUMBER: FHWA-NHI-130110

Print Friendly Page

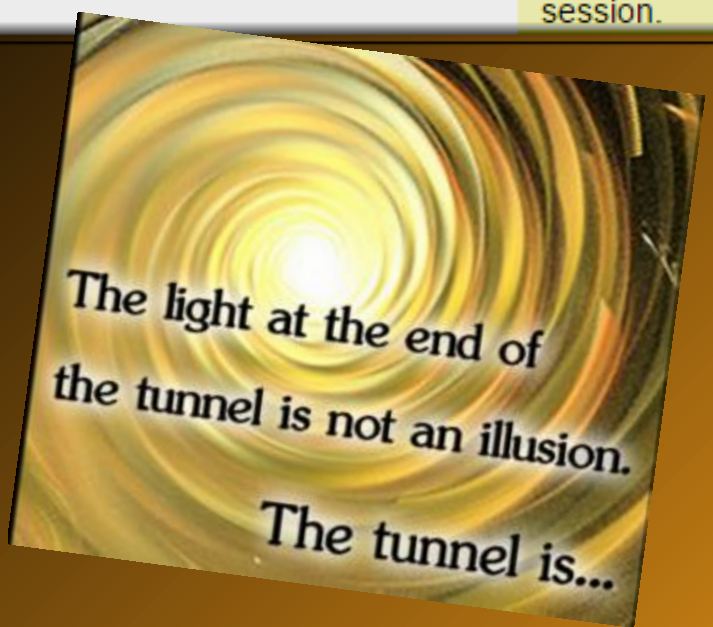
Sign Up for Session Alerts

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.



TRAINING

Bridge Safety Inspection ANNUALY

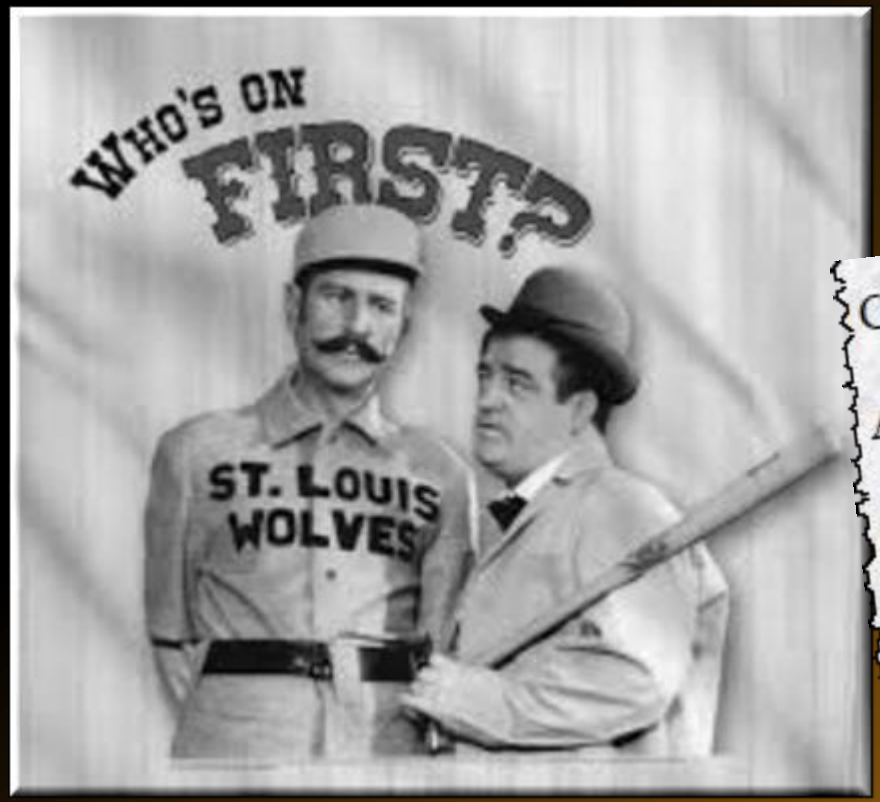
3 NHI Training Classes	18 Hrs/Class
Structure Alignment Meeting	8 Hrs

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?

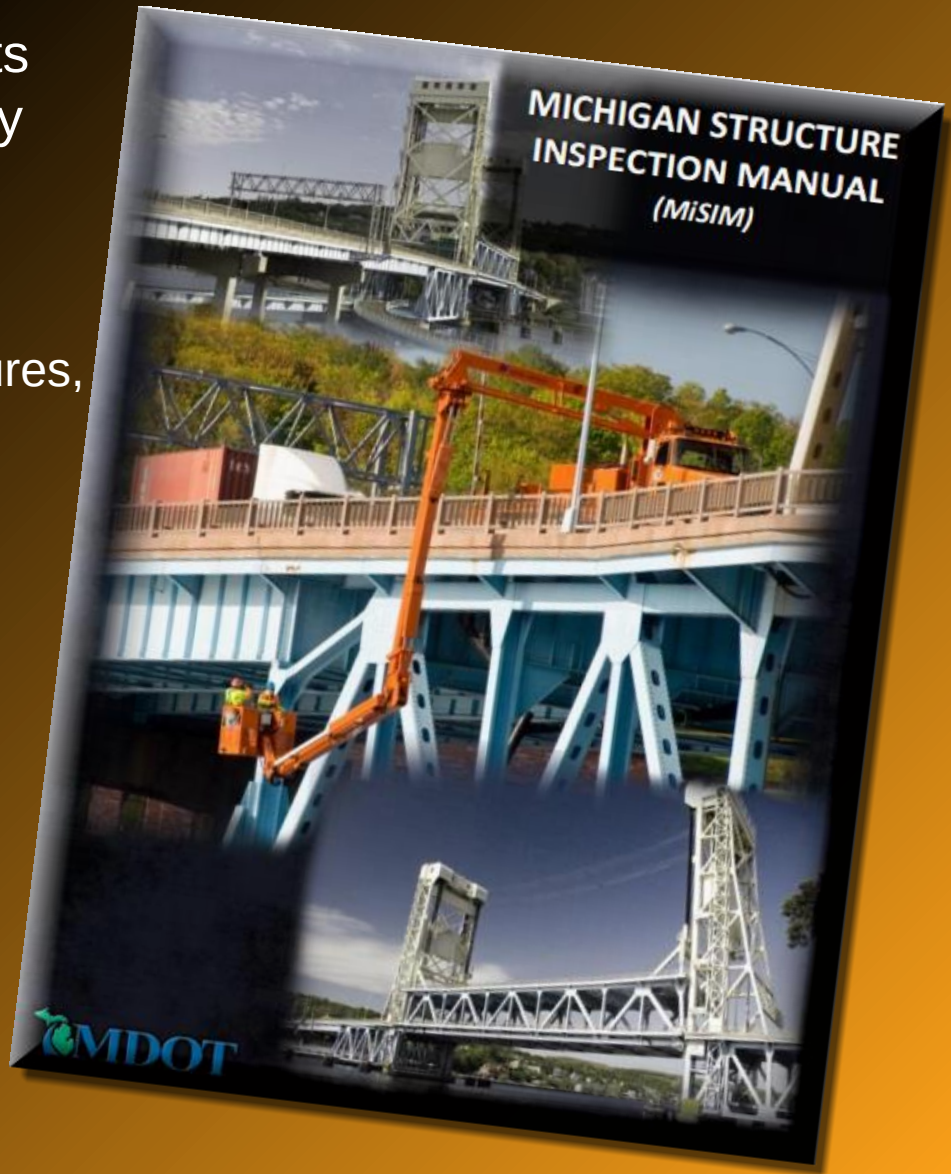
Abbott: Yes.

~ ~ ~ ~ ~

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



MICHIGAN STRUCTURE INSPECTION MANUAL (MiSIM)

Chapter 1	**Program Requirements**
Chapter 2	**Quality Assurance & Quality Control**
Chapter 3	**Inspection Frequency**
Chapter 4	**Bridge Files**
Chapter 5	**Inspection Procedures**
Chapter 6	**Scour** (recently updated)
Chapter 7	**Fracture Critical & Fatigue Sensitive Inspection**
Chapter 8	**Underwater Inspection**
Chapter 9	**Damage Inspection**
Chapter 10	**Critical Findings**
Chapter 11	**Inspection Equipment**
Chapter 12	**Non-NBI Structures**
Chapter 13	**Safety**

Program Requirements (MiSIM Chapter 1)

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

Eric Burns, P.E. **Structures Management Engineer**
BurnsE@michigan.gov (517) 322-3326

MDOT Michigan Department of Transportation
BRIDGE FIELD SERVICES

Bridge Safety Inspection

Rich Kathrens **Bridge Safety Inspection Program**
KathrensR@michigan.gov (517) 749-4274

Andrew Bouvy **Fracture Critical and Movable Bridge Inspection**
BouvyA@Michigan.gov (517) 322-6092

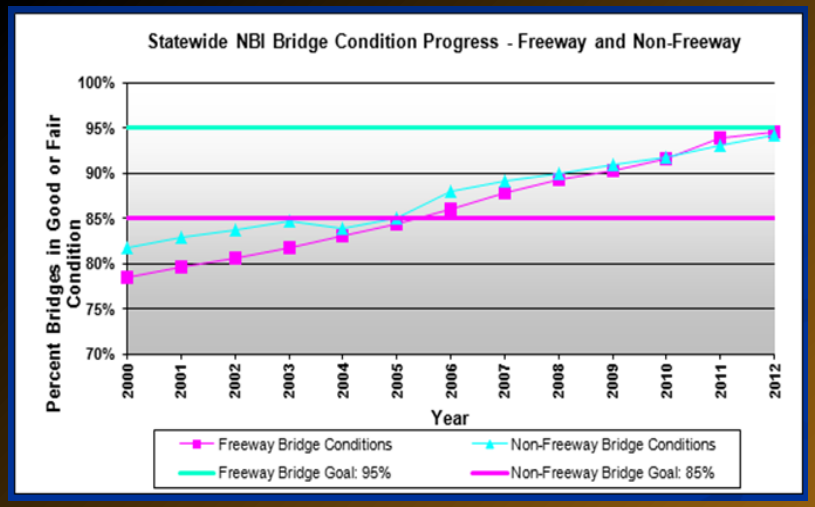
Kelly Davis **Fatigue Sensitive, Big Bridge Inspection**
DavisK2@michigan.gov (517) 322-6796

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

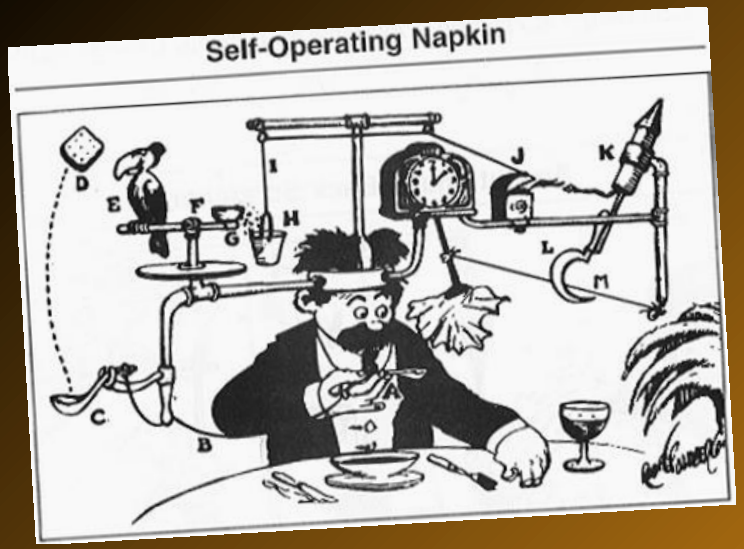
Jamie Hunt — **Bridge Inventory Specialist & Contract manager**
HuntJ10@michigan.gov (517) 335-1898



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



Operations Field Services, Structures Management

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

Program Requirements (MiSIM Chapter 1)

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

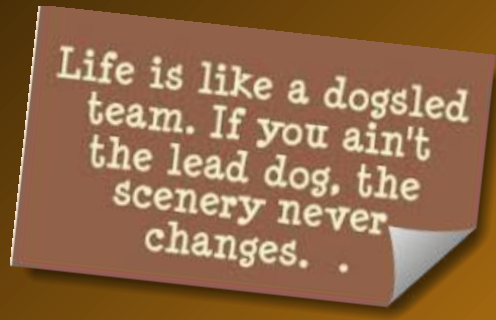
INSPECTION & LOAD RATING

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 MiBRIDGE
- 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
Tunnel Safety Inspection
Revised Recurrent Training Requirement

MUST Complete NHI Class B NBIS Bridge **NHI Tunnel** Inspection Refresher Training every **5** 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

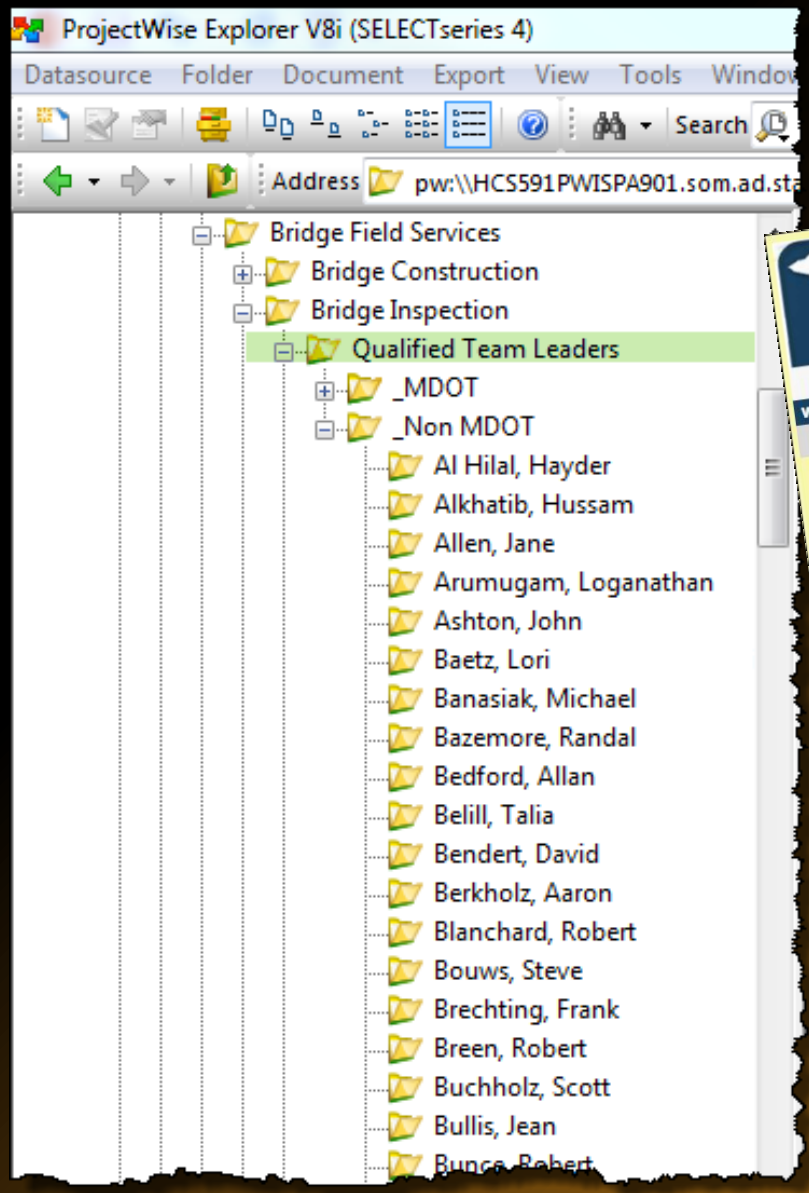
ANNUAL REVIEW of Qualifications (April 1 – March 31)

- 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.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Bridge Field Services
Bridge Construction
Bridge Inspection
Qualified Team Leaders
_MDOT
_Non MDOT
Al Hilal, Hayder
Alkhatib, Hussam
Allen, Jane
Arumugam, Loganathan
Ashton, John
Baetz, Lori
Banasiak, Michael
Bazemore, Randal
Bedford, Allan
Belill, Talia
Bendert, David
Berkholz, Aaron
Blanchard, Robert
Bouws, Steve
Brechting, Frank
Breen, Robert
Buchholz, Scott
Bullis, Jean


MiBRIDGE
Bridge Management and Inspection System
MiBRIDGE Home | Contact MiBRIDGE | Feedback | Help
Michigan.gov Home
Welcome Rich Kathrens
Administration
Assignments
Dashboards
Reports
Edit Inspector/Consultant Profile
(* =Required Fields)
User ID: *
First Name: *
Last Name: *
Organization Name: *
Address 1: *
Address 2:
City: *
State: *
Zip: *
Phone Number: *
Email Address: *
KATHRENSR
Rich
Kathrens
MDOT - Bridge Field Services
6333 Old Lansing Rd.
Lansing
Michigan
48917
517-322-5715
kathrensr@michigan.gov
(e.g. 517-123-4567)
(e.g. user@xyzcorp.com)

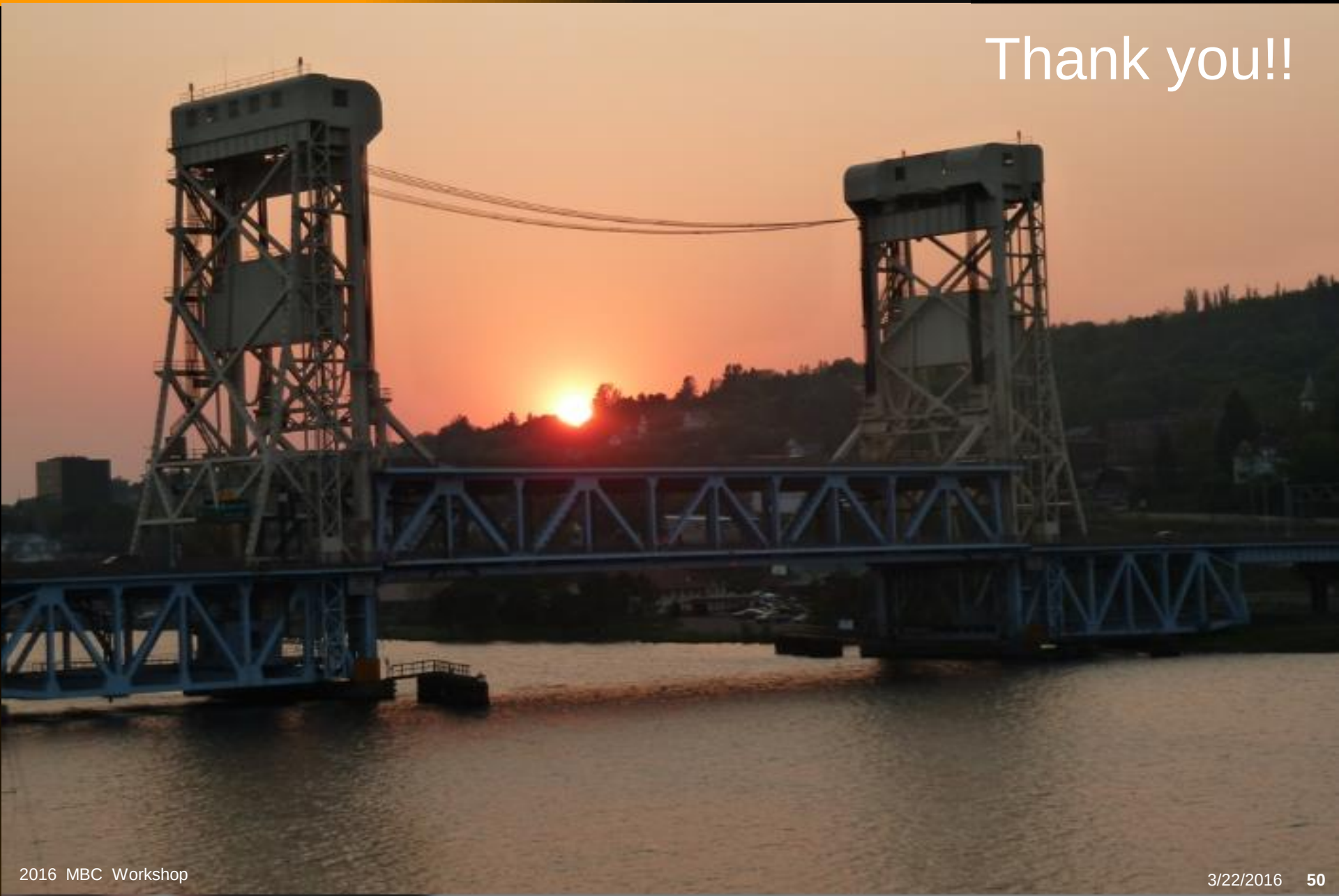
PROPOSED MiSIM Qualification Updates

DRAFT

MICHIGAN STRUCTURE INSPECTION MANUAL
BRIDGE INSPECTION – PROGRAM REQUIREMENTS

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


Thank you!!