Quality Assurance Review
National Bridge Inspection Standards &
Bridge Maintenance Program
Portage County
April 27, 2022

By: Mark Sherman, PE
CEAO Federal Bridge QA/QC Engineer

The scope of this review is to evaluate the agency's bridge inspection program based upon The Ohio Revised Code, the ODOT Manual of Bridge Inspection (MBI), and the National Bridge Inspection Standards (NBIS). This includes the following checklist, interviews with staff members responsible for the inspection program, review of files and documentation, and field inspection of bridges. Note: the inspection program includes inventory, maintenance and load rating in addition to the field inspections.

Agency: Portage County Engineer

DATE: 4/27/2022

Questionnaire Completed by: William Vermes, PE, Bridge Engineer

I. MAINTENANCE, REHABILITATION AND REPLACEMENT PROGRAM

A. NUMBER OF BRIDGES WITH MAINTENANCE RESPONSIBILITY

1. Greater than 20' long (NBIS length 23CFR 650c) **(Metric 22)** **98**

2. Bridges >= 10' and <= 20' long **(Metric 22)** 78

B. PROCEDURES AND BUDGET

1. Contract repairs and replacement per year:

Replacements:(Enter Number): Culverts : 2 Bridges: 2

Rehabilitations (Enter Number): Culverts : Bridges: 0

-List approximate annual budget: This is variable

Are Credit Bridge funds used? ☐

Are Fed Funds used? ☒

2. In-house repairs and replacements

Replacements:(Enter Number): Culverts : 0 Bridges: 0

Rehabilitations (Enter Number): Culverts : 1 Bridges: 0

List approximate annual budget: Variable

3. How are projects identified and selected? Check all that apply.

- ☒ Inspection reports.
- ☐ Sufficiency rating.
- ☐ Growth/development.
- ☒ Other…explain We are starting to incorporate bridge/culvert rehabilitation to avoid replacing the worst structures first.

4. How are plans developed for emergency repairs? Check all that apply.

- ☒ In-house
- ☒ Consultant
- ☐ Contractor
- ☐ Other explain Click or tap here to enter text.

5. Who does the work of emergency repairs? Check all that apply.

- ☒ In house
- ☐ Contractor
- ☐ Other explain Click or tap here to enter text.

6. How is repair work documented? (i.e. work record, time card, plans?)

- ☒ Work orders
- ☐ Time Cards
- ☐ Plans

7. Who is empowered to order emergency road closures and how is it done?

- ☒ Engineer?
- ☐ Sherriff?
- ☐ Commissioners?

II. INSPECTION PROGRAM

A. NUMBER OF BRIDGES WITH INSPECTION RESPONSIBILITY

1. Greater than 20’ long (NBIS length, ORC 5501.47, 5543.20) **(Metric 22)** **98**

2. Between 10’ and 20' long (ORC 5501.47, 5543.20) **(Metric 22)** 78

B. STAFFING

1. Name of individual who is the **Program Manager** (makes FINAL DECISION). List qualifications/yrs. experience (bridge inspection experience) **(Metric 1&2)**

Name: William Vermes, PE

- Yrs. Inspection related experience: 34

- List courses attended (& approx. dates) NHI Fracture Critical (October 2002), NHI Safety Bridge Inspection (August 2009), NHI Bridge Inspection Refresher Course (June 2018)

2. Name of individual in charge of bridge inspection unit (**Reviewer**). List qualifications/yrs. experience (bridge inspection experience) **(Metric 1)**

Name: John Wackerly

- Yrs. Inspection related experience: 35

- List courses attended (& approx. dates) NHI Fracture Critical, NHI Safety Bridge Inspection, NHI Bridge Inspection Refresher Course

3. **Team Leader** - individual in charge of bridge inspection team (INSPECTED BY). List qualifications/yrs. experience (bridge inspection experience) **(Metric 1&3)**

Name: John Wackerly, PE

- Yrs. Inspection related experience: 35

- List courses attended (& approx. dates) NHI Fracture Critical, NHI Safety Bridge Inspection, NHI Bridge Inspection Refresher Course

C. Indicate the percentage of time spent on the listed duties in the previous year

%TIME on inspections:

__25__ % Bridge/Culvert inspection
__25__ % Bridge Design/Plan prep
__30__ % Bridge Construction
__15__ % Bridge Maintenance
__0__ % Overload/Superloads
__0__ % Surveying
__5__ % Other -
__ __ % 100% on Bridges only

4. **Load Rating Engineer** – Name of individual responsible for load ratings (must be PE) **(Metric 4)**

a. List Ohio PE # __53391__ b. Name: William Vermes

5. **Underwater Bridge Inspection Diver** – Name person doing dive inspections **(Metric 5)**

- Name: Andrew Young, CONSOR Engineers, LLC

- Yrs. Inspection related experience: 10+

- List courses attended (& approx dates) NHI 130091 – Underwater Bridge Inspection

D. INSPECTION EQUIPMENT

1. Type of vehicle used for inspections

- ☒ Pickup truck
- ☐ Van
- ☐ SUV
- ☐ Custom vehicle

2. What typical inspection equipment does the inspection team normally carry with them to the inspection site? Check all that apply.

- ☒ Extension Ladder Length _12’ & 24”__
- ☒ 100' Fiberglass Tape
- ☒ Geologist Hammer
- ☐ Inspection Mirror
- ☒ Flashlight
- ☐ Thermometer
- ☐ Plumb Bob
- ☒ Camera
- ☐ 2'-0" Level
- ☐ Brush Hook/Axe
- ☐ Boat
- ☐ First Aid Kit
- ☐ Wire Brush
- ☒ 6’ Folding Rule
- ☒ Scraper
- ☒ Vertical Clearance Rod
- ☒ Probing Rod
- ☒ Paint Stick/Crayon
- ☐ Hip Boots and Waders
- ☐ Sounding Chains (Available)
- ☐ Wrenches
- ☐ Pliers
- ☒ Screw Driver
- ☐ Shovel
- ☒ Calipers

Other equipment not listed above: Click or tap here to enter text.

3. List types of NDT methods used? Circle all that apply.

☐ Dye penetrant; ☐ Magnetic particle; ☐ Ultrasound;

Other Click or tap here to enter text.

5. What equipment does your team have available for "hands on" access to FCM bridge members? (Metric 16)

Click or tap here to enter text.

6. Use of equipment (Metric 16)

a. How many bridges need a snooper? 1 (FRA 247 can use a snooper, but we missed the reservation deadline

b. How many bridges is it used on? See above

c. How often? See above

E. INSPECTION PROCEDURES

1. Approximately how many inspections were made during last calendar year? (Metric 6)

168

2. Approximately how many inspections are scheduled for the current calendar year? (Metric 6)

168

3. Average number of inspections per day (Metric 6) 10 in 3.5 hours

4. Approximately how long (hours) does it take to inspect average sized structures

a. Beam/Girder: Simple Span: ___0.2_ hrs. Multi-span: _____ hrs.

b. Slab bridge: Simple Span: __0.1__ hrs. Multi-span: __0.2_ hrs.

c. Truss (pony): Simple Span: __2___hrs. Multi-span: _N/A_ hrs.

d. Through/deck): Simple Span: __N/A_hrs. Multi-span: __N/A_ hrs.

e. Culvert: Single cell __0.1___hrs. Multiple Cells: __0.15__hrs.

5. Are previous inspection reports available at site for review? (Metric 15) Yes ☐ No ☒

6. Are bridge inspections recorded in field on ☒ Paper ☐ Electronically

7. Are photos available for every bridge? Yes ☒ No ☐ **(If no, you need to start.)**

8. Are photos posted in Assetwise? Yes ☒ No ☐ **(If no, you need to start, and be selective.)**

9. Are defects photos taken during inspection? Yes ☒ No ☐ **(If no, you need to start.)**

10. Are Bridge comments recorded in Assetwise? Yes ☒ No ☐ **(If no, you need to start.)**

11. Are previous bridge comments brought to the bridge? Yes ☒ No ☐ **(If no, why not)**

12. Are the bridge plans carried to the bridge site for review? (Metric 15). Yes ☐ No ☒

13. Are bridge records available for review in the bridge office? (Metric 15) Yes ☒ No ☐

7. Who determines the need for a routine inspection frequency greater than once

Annually, and what criteria is used? (Metric 6)

Explain: **William Vermes, Program Manager. This criteria is currently being developed.**

8. Do you have bridges requiring insp. more frequently than 12 MO Yes ☒ No ☐

2 Number due to **Damage** Choose an item. List frequency of inspection. (Metric 11)___

___ Number needing **In-depth** Choose an item. List frequency of inspection. (Metric 11)_____

2 Number of **Special insp** Choose an item. List frequency of inspection. (Metric 11)

9. Does your inspection team believe it has enough time to do the job?

Yes ☒ No ☐

10. List your quality assurance checks made during the inspection process? (Metric 20)

William Vermes has been reviewing the bridge inventory and identifying deficiencies/ errors in the bridge load rating and inspection findings.

11. Do you have any bridges that need underwater inspections in less than 60-month intervals? (Metric 8)

Yes ☐ No ☒ (Assetwise check)

12. Do any bridges have fracture critical inspections performed more frequently than 24-month intervals? (Metric 10)

Yes ☐ No ☒ (Assetwise check)

13. Is a Team Leader at the bridge at all times during the following inspections? (Metric 12)

Initial Inspection? Yes ☒ No ☐

Routine Annual Inspections? Yes ☒ No ☐

Special Inspections? Yes ☒ No ☐

Underwater Inspections? Yes ☒ No ☐

Fracture Critical Inspections? Yes ☒ No ☐

F. SCOUR CRITICAL BRIDGES (Guidance in ODOT Manual of Bridge Inspection)

1. No. of bridges considered scour susceptible? (Service over Water) Number _1__

2. Number of bridges inspected by probing? Number _30____.

3. Number of Scour Critical bridges (item 113 - 3, 2, 1 or 0)? (Metric 18) Number ___.

4. Are Plans of Action (POA) complete and implemented for all bridges coded "Scour Critical"? (Metric 18) Yes ☐ No ☐ If no, Why? Click or tap here to enter text.

5. How many structures are coded 6 on item 113 Scour Critical? (Metric 18) Number _____.

6. **How are scour evaluations performed? (Metric 18)**

Click or tap here to enter text.

7. Who determines the need for diving inspections and by what criteria?

Click or tap here to enter text.

G. INVENTORY

1. What kinds of inventory quality assurance checks are performed? (Metric 22)

Who checks? **William Vermes, Program Manager**

How Often?... ☒ With every inspection ☐ Less often than once per year

2. How often is the inventory checked for needed updates? (Metric 22)

How Often?... ☒ With every inspection ☐ Less often than once per year

3. How is the inventory data input into Assetwise?

☐ Electronically, Direct into Assetwise from collector App. as bridge is inspected
☒ All at once at the end of the year from a paper copy into Assetwise
☐ As each inspection is complete from paper to computer to Assetwise.

4. When is the updated/new inventory data forwarded to ODOT? **(Metric 23)**

Changes discovered during inspection? Yes ☒ No ☐
Changes from new construction or rehab? Yes ☒ No ☐

5. NBIS requires that the inspecting organization maintain master lists of the following:
(Metric 16,17,11)

a. Bridges that contain fracture critical members, including the location and description of such members on the bridge and the inspection procedures of such members (Each individual FCM member on each FCM bridge must be clearly identified in the bridge file) (Where a FCM Identification Plan exists then look for remaining fatigue life). Master List?

Yes ☒ Number__5__: If, No, Why not? _____ NA ☐

b. Bridges requiring underwater inspections.
Number__1__ NA ☐

c. Bridges with unique or special features (i.e., pin & hanger, draw, suspension)
Number__0__ NA ☐

Note: An examination of the files will be performed during the review.
Options: For the files listed below you can email a copy of a typical file or have them on hand for inspection.

- Bridge Files
- Scour Critical POA.
- Fracture Critical Plan.
- UW inspection Procedure

H. PROCEDURES

1. Are new maintenance problems identified during bridge inspection? (Metric 15)

Yes ☒ No ☐

2. How do the inspectors inform maintenance personnel of routine bridge maintenance problems (written, oral, other)? (Metric 15)

☒ Written work order.
☒ Electronic Communication.
☒ Oral direction.
☐ Other. Explain Click or tap here to enter text.

3. Who do the inspectors notify when emergency repairs, or critical findings are necessary (action required within 1 week)? (Metric 21)

Check all that apply.

☐ County Engineer ☐ Bridge Superintendent
☒ County bridge Engineer ☐ Sherriff

How is this emergency action documented? (Must be entered and tracked in Assetwise)

Explain if different than procedure in Assetwise Click or tap here to enter text.

4. If a bridge requires emergency repairs, is this noted as part of the inspection report or as a separate document? (Metric 21)

Separate document

5. Who checks proper placement of signs (load posting, clearance, speed restriction, narrow bridge etc.)? (Metric 15)

County Engineers Office

I. LOAD ANALYSIS AND POSTING

1. Number of plans for existing bridges available for NBIS length bridges. _74__

2. Number of plans for non-NBIS bridges (>= 10' and <= 20' long) __16__

3.* Number of bridges analyzed using the *AASHTO Bridge Evaluation **(Metric 13)**__**BrR?**__

By Whom (Metric 13)

- ☐ Load Rating Engineer
- ☐ County Engineer
- ☐ Bridge Engineer
- ☒ Consultant

4. When are bridges load rated, after initial rating. Check all that apply

- ☐ Every 5 years regardless.
- ☒ When there is a significant change in condition rating.
- ☒ When wearing surface thickness increases more than 1-1/2 inches
- ☒ When permit load is requested
- ☒ other – I am reviewing the load ratings and have identified inaccuracies.

5. Methods used (Metric 13)

- ☒ AAWSHTO BrR
- ☒ Hand Calculated
- ☐ Engineering Judgement (BR100)
- ☐ BARS or other proprietary software program
- ☒ Other Explain__ODOT spreadsheets_____

6. Number of NBIS length bridges "not ratable" at all due to lack of data and may have to be field tested. (Metric 13) **(***These are bridges that have a coding of **5**, not **0** in the method of analysis Item.)*

Number __**38**__ Plan of action for load rating these? **Will contact D-4 to ask if plans are available for two structure built on Old SR 18 and one on Old SR 225. The concrete arch on Old 225 can be load rated as an unreinforced concrete arch idf necessary.)**

7. Number of NBIS length bridges load posted (Metric 14) (Assetwise Check)

Number of bridges posted __17__. Number of bridges with posted Signs in the field_ 17___.

8. List bridges closed due to condition rating (rough check)

6732518 (Newton Falls Road), 6740448 (Ravenna Road), 6731295 (Johnson Road)

9. List bridges rated less than 100% Ohio legal load and not physically load posted, and resolution. (Assetwise Check)

SFN 6738796 – Palmyra Twp., Wayland Rd o. Kale Creek, 13-ft concrete slab. Resolution: Site visit to obtain bar spacing at spall, and possible bar size. Have bridge crew core wearing surface to determine WS thickness and location of top of slab, use ODOT spreadsheet to perform load rating.

10. Number of NBIS bridges with Gusset Plates (Metric 13) 5

11. Number of NBIS bridges with Gusset Plates analyzed. (Metric 13) 5

12. Describe filing system (where files are kept): (Metric 15)

- Inspection reports, including old inspections:

☒ On paper file in Office
☐ Electronically
☒ In Assetwise
☐ All three
☐ Other

- Design Calculations:

☐ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☒ Other (Unknown)

- Plans:

☒ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Load analysis calculations:

☒ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Inventory forms:

☒ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Photos and sketches:

☐ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Repairs and maintenance history

☒ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Scour evaluation:

☐ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☐ Other (Unknown)

- Scour POA:

☐ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☒ Other (Unknown)

- Fracture Critical File:

☒ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Load Posting/Closing:

☒ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Underwater inspections:

☒ On paper file in Office
☒ Electronically
☐ In Assetwise
☐ All three
☐ Other

- Special inspection eqpt. or procedures:

☐ On paper file in Office
☐ Electronically
☒ In Assetwise
☐ All three
☐ Other

- Flood data, waterway adequacy, channel cross sections:

☐ On paper file in Office
☐ Electronically
☐ In Assetwise
☐ All three
☒ Other (Unknown)

Note the NBIS Retention period: BR-86 report 10 years, All records 3 years after bridge removed, Load rating calculations 3 years after a new rating is done.

13. What is the FC bridge inspection frequency? (Metric 16) **Every _24_ Months**

14. Is the FC Plan completed for all FC bridges? (Metric 16) **Yes ☒ No ☐**

15. Are the FCM Identified in the FC Plan? (Metric 16) **Yes ☒ No ☐**

16. What is the underwater inspection frequency? (Metric 17) **___Every _60_ Months_____**

17. Are the underwater elements identified and located? (Metric 17) **Yes ☒ No ☐**

18. List any complex bridges: (Metric 19)

None

19. Do the complex bridges require specialized inspection procedures and additional inspector training? (Metric 19)

Yes ☐ No ☒

Describe:

Other equipment not listed above: **1-Ultarsonic thickness gage & 1-Rotary percussion concrete sounding tool (Delamtek sounding tool), both B. Vermes' personal equipment.**

Part II: Field Review

Inspection Reports (metric 12)

As part of this review, seven bridges were field reviewed to compare conditions with the most recent inspection report. The individual condition ratings for all of the field sampled bridges properly reflected the field conditions within the tolerance of 1 rating value when compared to the Manual.
Summary ratings correspond with the NBIS inspection items.

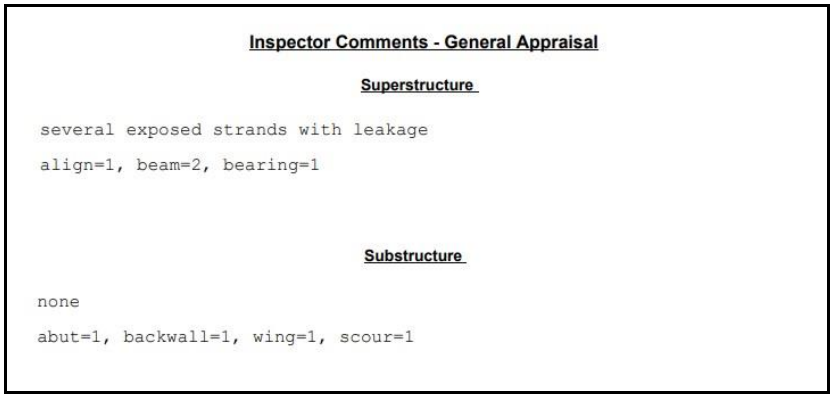
Field Review:

OR-C018B-BR00700_(6733808) Prestressed Box beams

Item 58 Deck…… 5 Agreed Same as Box beams

Item 59 Superstructure……5 Agreed adjacent beams 4&5 have exposed and broken strands. And one, beam 2, with exposed strands.

Item 60 Substructure…….8 Rear Abut has a few cracks and high degree of staining near the beam seats, where every joint leaks. Possible delamination near seats. Inspection does not speak to this. Forward abutment similar. Just based on the age and appearance, I would rate this a 7. Only sounding the tops of the abutments can determine the best rating.



Inspector Comments - General Appraisal

Superstructure

several exposed strands with leakage

align=1, beam=2, bearing=1

Substructure

none

abut=1, backwall=1, wing=1, scour=1

Item 61 Channel……..8 Agreed

Item 61.01 Scour……..7 Agreed

Item 62 Culvert……N

Item 36 Railing……..1 0 0 0 Agreed

Item 72 Approach Alignment ……..9 Agreed

Comments: Comments somewhat lacking in the Location Severity and Extent

Defect Photos: Only two, which gives us a good, but somewhat blurry photo of the two beams with broken strands. Another photo showing the entire beam arrangement would put this in better context.

Channel Photos: Channel photos are in adequate as the two photos are taken too close and from the same side in the same direction.

POR-C082F-RT03100_(6734111) Steel Truss

Item 58 Deck..... **6** Agreed
Item 59 Superstructure.....**3** Agreed Section loss and damage are abundant on almost every member.
Item 60 Substructure.....**5** Agreed
Item 61 Channel.....**4** Agreed
Item 61.01 Scour.....**7** Agreed
Item 62 Culvert.....N
Item 36 Railing.....0 0 1 0 Agreed
Item 72 Approach Alignment .....6 The approach curve is making vehicles slow down before reaching the bridge. I would argue a 5 for this alignment.
Comments: Very Good comments in Assetwise concerning the superstructure.
Defect Photos: Given the number a level of detail of the comments, I expected to see more photos related to those defects.
Channel Photos: No Channel photos in Assetwise.

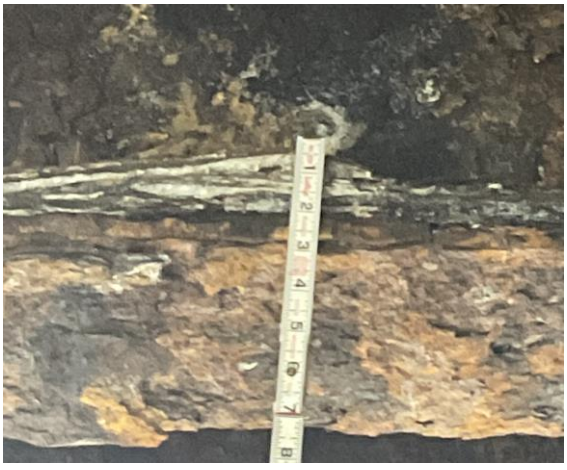
POR-C018I-ED05600_(6733840) Concrete Tee Beam

Item 58 Deck..... 6 Agreed
Item 59 Superstructure.....5 Agreed
Item 60 Substructure.....4 Agreed (governed by scour)
Item 61 Channel..... 4 Agreed
Item 61.01 Scour..... 4 Agreed
Item 62 Culvert..... **N**
Item 36 Railing ..... 0 0 0 0 Agreed
Item 72 Approach Alignment .....6 Agreed
Comments: Comments are really brief and lacking the extent and severity components for scour. How much of the footing is exposed and how deep?
Defect Photos: Good defect photos.
Channel Photos: Good Channel Photos in Assetwise.

POR-T123B-CH06300_(6730256) Steel Beams

Item 58 Deck…….. 4 Agreed
Item 59 Superstructure…… 4 Agreed (May be lower when section loss is actually measured. See photos below)
Item 60 Substructure……. **5** Agreed
Item 61 Channel……..4 Agreed
Item 61.01 Scour……..5 Agreed
Item 62 Culvert……..N Agreed
Item 36 Railing…… 0 0 0 0 Agreed
Item 72 Approach Alignment ……..3 Agreed
Comments: Comments need to have that severity extent and locations better defined.
Defect Photos: Some general photos, but no closeup photos of the section loss which is significant, given how bad these beams look.

Above photos In Assetwise



These two photos are the same beam, before and after rust removal with a hammer. (Within arm's length and without a ladder). This is typical of almost every beam. This one is beam 4, 5 feet from face of abutment. Lower flange is down to about 3/8 inches thick.

Channel Photos: Two photos taken from the same side. Need both upstream and downstream photos.

POR-C177D-CH07350_(6732534) Continuous Slab (May be a Frame)

Item 58 Deck…….. 4 Agreed
Item 59 Superstructure……4 Agreed
Item 60 Substructure……6 Agreed
Item 61 Channel…….. 6 Agreed
Item 61.01 Scour…….. 6 Agreed
Item 62 Culvert…….. N Agreed
Item 36 Railing…….. 0 0 1 0 Agreed
Item 72 Approach Alignment ……..8
Comments: Basic Comments in Assetwise. Severity and extent comments would be helpful on scour and abutment spalling. Super comments need to state location of major spall.
Defect Photos: One good close-up of defect in Assetwise, but need to see the extent and location of all spalled areas too.
Channel Photos: Channel Photos in Assetwise look like they are from the same side.

POR-MMAIN-KENT _(6737080) Masonry Arch

Item 58 Deck……..N
Item 59 Superstructure……7 Agreed
Item 60 Substructure……..4 Agreed (governed by scour)
Item 61 Channel……..7 Agreed
Item 61.01 Scour…….. 4 Agreed
Item 62 Culvert……..N Agreed
Item 36 Railing…….. 0 0 0 0 Agreed
Item 72 Approach Alignment ……..7 Agreed
Comments: Good Comments
Defect Photos: Good Photos in Assetwise
Channel Photos: Good Channel Photos

Field Review Summary:

Overall, the county is doing a good job with their bridge inspection program. Their records are complete and organized. I found their ratings to be well within the parameters set by the manual. The comments could use a little more elaboration at times, with corresponding photos. Many of the channel section photos are taken from the same side. They need to be taken from upstream and downstream in order to capture what is needed.

Note: Portage County has more extensive photos, and complete documentation in their office bridge files, more than what is posted in Assetwise.

PART III Office file Review

Fracture critical bridges. 5 total

Fracture Critical Member and Fatigue Prone Connection ID Plan.

Bridge Load Rating Report, including Gusset plate analysis.

Underwater inspections 1

POA for Scour ?

Scour susceptible bridges Everything over water

Critical findings none

All files are complete with all documentation concerning load rating, channel photos and defect photos, along with previous inspection reports. Their files are complete and comprehensive, documenting the history of every bridge through reports, plans and photographs.

PART IV Snapshot DATA Summary of Program

PORTAGE County 2022

INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

12/20/2022

Inventory Data - NBIS Bridges Only

	NBIS COUNT
NBIS Bridges > 20'	95
Bridges 10'-20'	75
All Bridges	170

Item 221 Inspection Responsibility		CODE	#NBIS	#ALL
Data Tab Col BV,BW	County	2	95	170

Item 21 Maintenance responsibility		CODE	#NBIS	#ALL
Data Tab	County	2	95	169
Col D	City or other local	4	0	0
	Railroad	27	0	0
	Private (tohter than RR)	26	0	1
	State Park	11	0	0
	Local Park	23	0	0
	State Agency	1	0	0
	Township	3	0	0
			95	170

Item 42A Type service on bridge		CODE	#NBIS	#ALL
Data Tab	Other	0	0	0
Col Q	Highway	1	92	166
	Railroad	2	0	0
	Ped/Bikeway	3	0	0
	Hwy/RR	4	0	0
	Hwy/Ped	5	3	4
			95	170

Item 42B Type service under bridge		CODE	#NBIS	#ALL
Data Tab	Other	0	0	1
Col R	Hwy w/ or w/o Ped	1	0	0
	Railroad	2	8	8
	Ped/Bkwy	3	0	0
	Hwy w/ RR	4	0	0
	Waterway	5	86	160
	Hwy/Waterway	6	0	0
	RR/Waterway	7	1	1
	Hwy/Waterway/RR	8	0	0
	Relief (for waterways)	9	0	0
			95	170

All data is complete and correct in this section.

ITEMS 43A,B,C Structure Type	Data (Col M,N,O)	CODE	#NBIS	#ALL
Concrete Slab		101	4	23
Concrete Tee Beam		104	2	2
Concrete Frame		107	3	13
Concrete Culvert (incl frame culverts)		119	1	17
Concrete Continuous Slab		201	8	8
Steel Beam or Girder		302	21	23
Steel Thru Truss (inlcudes Pony)		310	5	5
Steel Culvert (incl frame culverts)		319	7	32
Steel Continuous Beam or Girder		402	6	6
Prestressed Concrete Thru Arch		502	5	5
Prestr. Conc. Cont. Box Beam/Girder Multiple		505	29	29
Prestressed Concrete Continuous Thru Arch		602	1	1
Prestr. Conc. Cont. Box Beam/Girder Multiple		605	2	2
Timber Deck Arch		811	1	1
Aluminum or Iron Culvert (incl frame culverts)		919	0	3
			95	170

Item 92A Fracture Critical		CODE	#NBIS	#ALL
Data Tab	Requires FC Inspection	Y	5	n/a
Col U,V,Y	Requires FC Inspection	N	90	n/a
			95	n/a
	FC Switch Y/N is Blank		0	n/a

Item 113 Scour			#NBIS	#ALL
Data Tab	Bridge not over waterway	N	8	9
Col AA	unknown foundation	U	0	0
	over tidal waters	T	0	0
	foundations on dry land	9	0	0
	stable above footing	8	20	28
	countermeasures installed	7	0	0
	no scour evaluation made	6	0	0
	stable within footer limits	5	63	128
	stable action needed	4	4	5
	scour critical - unstable	3	0	0
	scour critical - scour present	2	0	0
	scour critical - failure imminent	1	0	0
	scour critical - bridge failed	0	0	0
			95	170

POR-C047H-ED03700_(6731589) POR-C177A-RV05400_(6732518)
POR-MMAIN-KENT _(6737080) POR-T129D-PL10400_(6730922)
POR-T223E-HR10650_(6737870)

The bridges above have a non-critical finding scour rating of 4, that requires corrective measures. Once the measures are implemented the scour rating should move to a 7. See Column AA in Data TAB of the Snapshot for olive highlights.
Note: (If these measures were taken, then the rating needs changed. If not, then you need a plan for corrective measures. A code of 4 or less should not be in the system for more than a year.)

All data is complete and correct in this section.

Item 63	Documented Engineering Judgment		#NBIS	#ALL
	Field Eval & Doc EJ		3	n/a
		BR_100 for these bridges?		

Item 92B	Underwater	CODE	#NBIS	#ALL
Data Tab	requires dive inspection	N	94	n/a
Col W,X,Z	requires dive inspection	Y	1	n/a
			95	

Item 709	Plan Information	CODE	#NBIS	#ALL
Data Tab	plans not avail	0	3	10
Col. AW	plan avail	1	65	126
	field measured	2	27	28
	Field Testing	3	0	0
	not applicable	N	0	2
			95	166

Item 63	Method of Analysis	CODE	#NBIS	#ALL
Data Tab	Field Eval & Doc. Engr Judgment	0	3	10
Col. AV	Work Stress	1	0	0
	LFR	2	0	0
	LRFR	3	0	3
	load test	4	0	0
	No rating done	5	0	37
	LFR	6	68	78
	AS	7	3	14
	LRFR	8	21	28
	Assigned LFR HS20	D	0	0
	Assigned LRFR HL93	F	0	0
	not appl (RR, etc)	X	0	0
			95	170

REMINDER:

Load Factor required for bridges built after 1993 **(exceptions: timber, etc,)**

LRFR required for bridges built after 2010

Note: Given the changes coming in 2023 and the now required shear analysis, please make sure your load rating documentations are complete and include a BR100 with complete statements of assumptions, measurements and methodologies for anything using engineering judgement.

All data is complete and correct in this section.

Inspection Condition Data - NBIS Bridges Only

Item 41	Operating Status	CODE	#NBIS	#ALL
Data Tab	Open, No restriction	A	81	151
Col AM	Open, posting recommended	B	0	0
	Open, Half width constr.	C	0	0
	Open because of temp. fix	D	0	0
	Open using temp. structure	E	0	0
	New struture not yet open	G	0	1
	closed for load cap. reason	K	2	2
	Posted for load capacity	P	12	16
	Posted for other than load	R	0	0
	Closed for other than load	X	0	0
			95	170

Metric 13	Load Rating Data	
Load Rating Tab		# OF ERRORS
Col. AN	Op RF greater than Inv RF?	0
Col. AO	Posting and % Legal OK?	0
Col. AP	"0" used instead of blank	0
Col. AT	% legal <> lowest RF	1
Col.A V	Item 70 correct?	0
Col. AW	Method of Rating Alike?	0
Col. AX	Op & Inv RF in Tons as req'd?	7
Col. AY	Item 575 correct?	0
Col. AZ	Depth of fill completed?	2

POR-C018A-00675_(6730982)

The 7 bridges below were coded 5 or lower, for method used, so the Oper. and Inv. factors have to be in tons. See Load Rating TAB
POR-C018A-00675_(6730982) POR-C031K-0838 _(6734670) POR-C135G-6696 _(6732349)
POR-C155D-06.516_(6730664) POR-T0078-0003 _(6731000) POR-T1213-00.291_(6730011)
POR-T240A-0083 _(6731032)

POR-T141A-00.436_(6731296) POR-C031K-0838 _(6734670)
The two bridges above are lacking Fill data on Column AZ Item 580

All other data is complete and correct in this section.

KEY METRICS

(C)	Compliant	(CC)	Conditionally Compliant
(SC)	Substantially Compliant	(NC)	Non- Compliant
		(NC)	(SC) If corrected within 6/12 months
			Refresher=6 mo, Comprehensive=12 mo

METRIC 2 - Program Manager Qualificati (from files examination)

From Files review	Missing	#sampled	% PASS	COMPLIANCE
PE /Experience	0	1	100.0%	(C)
Comprehensive	0	1	100.0%	(C)
Refresher	0	1	100.0%	(C)

METRIC 3 - Team Leader Qualification (from files examination)

From Files review	Missing	#sampled	% PASS	COMPLIANCE
Degree /Experience	0	1	100.0%	(C)
Comprehensive	0	1	100.0%	(C)
Refresher	0	1	100.0%	(C)

METRIC 6 Insp. Frequency Routine

Bridge Inspections Overdue			# OVERDUE		% PASS	COMPLIANCE
Data Tab	NBIS -	24 months	0		100.0%	(C)
Col. AB	ORC -	Calendar Year	0		100.0%	(C)
Col. AB	All	Routine insp.	0			
	BIM -	18 months	0		100.0%	(C)

METRIC 8 - Insp. Frequency Underwater

Dive Inspections Overdue		# OVERDUE	# UW	% PASS	COMPLIANCE
Data Tab Col. Z	60 months	0	1	100.0%	(C)

METRIC 10 - Insp. Frequency FC Member

FC Inspections Overdue		# OVERDUE	# FC	% PASS	COMPLIANCE
Data Tab Col. Y	24 months	5	5	94.7%	(SC)

Records show FC inspection performed with Routine Inspection, but the date was not updated in Assetwise.

All other data is complete and correct in this section.

METRIC 12 - Routine Inspection		(** from field review)			
Field Ratings		#>+/-1	# Ratings	% PASS	COMPLIANCE
	field ratings**	0	24	100.0%	(C)
Comments		Missing	#<6	% PASS	
Tab	Comments when Rating <6	0	95	100.0%	(C)
	Adequacy comments **	0	30	100.0%	(C)
		Error	Total Scour	% PASS	
Comment	Rating should be = Scour	0	87	100.0%	within tolerance +/- 1
Tab	Noncompliant Scour Rating Er	0	87	100.0%	(C)

METRIC 14 - Posting	Load rating data tab			
From Files review	# errors	#sampled	% PASS	COMPLIANCE
Op RF < 3 tons but not closed	7	95	92.6%	(SC)
Op RF = 0 but not closed	0	95	100.0%	(C)
% Legal < 100 but not posted	0	95	100.0%	(C)
Item 41 = B	0	95	100.0%	(C)

The 7 bridges below were coded 5 or lower, for method used, so the Oper. and Inv. factors have to be in tons. See Load Rating TAB

POR-C018A-00675_(6730982) POR-C031K-0838 _(6734670) POR-C135G-6696 _(6732349)
POR-C155D-06.516_(6730664) POR-T0078-0003 _(6731000) POR-T1213-00.291_(6730011)
POR-T240A-0083 _(6731032)

There are 4 bridges that are posted yet no sign installation date is entered in Assetwise. See Load rating TAB column AM pink highlights.

POR-T165A-RV02650_(6730698) POR-C211A-FD08000_(6730671)
POR-C132B-PL03000_(6738796) POR-C0791-RN03200_(6735312)

METRIC 16 - Fracture Critical Inspection	(from files examination)			
From Files review	Missing	# FC	% PASS	COMPLIANCE
Fract Critical Member ID	0	2	100.0%	(C)
Fatigue Prone Detail	0	2	100.0%	(C)
Gusset Plate Calculations	0	2	100.0%	(C)
FC Inspection Procedure	0	2	100.0%	(C)

METRIC 17 - Underwater Inspection	(from files examination)			
From Files review	Missing	# UW	% PASS	COMPLIANCE
UW Inspection Procedure	0	1	100.0%	(C)
Location of UW elements	0	1	100.0%	(C)
UW frequency identified	0	1	100.0%	(C)

All data is complete and correct in this section.

PRELIMINARY FHWA 23 Metric Matrix

23 metrics used by FHWA to measure NBIS compliance

Compliance Codes for the following Metrics:

(C)	Compliant
(SC)	Substantially Compliant
(CC)	Conditionally Compliant (Adhering to approved PCA)
(NC)	Not Compliant

Metric	Description	(C)	(SC)	(CC)	(NC)
1	State Bridge Inspection Organization				
2	Program Manager Qualification				
3	Team Leader Qualification				
4	Load Rating Engineer Qualification				
5	UW Bridge Inspection Diver Qualification				
6	Routine Inspection Frequency - Low Risk				
7	Routine Inspection Frequency - High Risk				
8	UW Inspection Frequency - Low Risk				
9	UW Inspection Frequency - High Risk				
10	FC Inspection Frequency				
11	Frequency Criteria				
12	Inspection Quality **				
13	Load Rating				
14	Posted or Restricted Bridges				
15	Bridge Files				
16	FC Bridges				
17	UW inspection procedures				
18	Scour Critical Bridges				
19	Complex Bridges				
20	QC/QA				
21	Critical Findings				
22	Inventory **				
23	Updating of Data				

Metric 14 POSTING has some minor coding errors that need cleaned up. These are not Calculation or rating factor errors.

Metric 10 Records show FC inspection performed with Routine Inspection, but the date was not updated in Assetwise.

Portage County is compliant with everything except quality of comments in the inspection area. The field review found a few comments lacking the Location Extent and Severity markers that need to be a part of every good inspection. The channel photos were also lacking or one direction was missing on four of the bridges reviewed in the field.
A few minor data input corrections in the load rating area need to be addressed in Assetwise as well.