

Quality Assurance Review
National Bridge Inspection Standards &
Bridge Maintenance Program

Noble County

April 20, 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 Reviewed: _____ Noble County Engineer _____

Checklist completed by: _____ Melinda Chase _____ Date: _____ 3/7/22 _____

I. MAINTENANCE, REHABILITATION AND REPLACEMENT PROGRAM

A. NUMBER OF BRIDGES WITH MAINTENANCE RESPONSIBILITY

- 1. Greater than 20' long (NBIS length 23CFR 650c) (Metric 22) **99**
- 2. Bridges >= 10' and <= 20' long (Metric 22) **51**

B. PROCEDURES AND BUDGET

1. Contract repairs and replacement per year

- List typical work items

Replacements: Number: Culverts: 2 Bridges: ~1
Rehabilitations: Number : Culverts: - Bridges: 1
Maint.Contracts Number : Culverts: - Bridges: -

-List approximate annual budget: - \$20K/PROJECT MATCH WHEN NEEDED

- Are Fed Funds used? Yes X No
- Are Credit Bridge funds used? Yes X No

2. In-house repairs and replacements

Replacements: Number: Culverts: 60 Bridges: 1
Rehabilitations: Number: Culverts: - Bridges: 3
Maint.Contracts Number: Culverts: - Bridges: -

- List approximate annual budget - \$300,000
-\$200,000(CULVERTS) -\$100,000(BRIDGES)

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

- Inspection reports.
- Sufficiency rating.
- Growth/development.
- Other...explain - PROJECTS SUBJECT TO CERTAIN FUNDING CRITERIA

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

- In-house
- Consultant
- Contractor
- Other explain _____

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

- In house
- Contractor
- Other explain _____

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?

Engineer or sheriff barricades road, contacts EMA, Sheriff, announced through local media

II. INSPECTION PROGRAM

A. NUMBER OF BRIDGES WITH INSPECTION RESPONSIBILITY

- 1. Greater than 20' long (NBIS length, ORC 5501.47, 5543.20) (Metric 22) 99
- 2. Between 10' and 20' long (ORC 5501.47, 5543.20) (Metric 22) 51

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: _____ Karl J. Oprisch, P.E. _____

- Yrs. Inspection related experience: __See attached

- List courses attended (& approx. dates) ____See attached_____

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

- Name: ____Melinda C. Chase, P.E. _____

- Yrs. Inspection related experience: __See attached__

- List courses attended (& approx. dates) ____See attached_____

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

(Metric 1&3)

- Name: ____Samantha D. Greene, P.E. _____

- Yrs. Inspection related experience: __See attached__

- List courses attended (& approx. dates) __See attached_____

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

%TIME on inspections:

<input checked="" type="checkbox"/> _25_ Bridge/Culvert inspection	<input type="checkbox"/> _ Surveying
<input checked="" type="checkbox"/> _15_ Bridge Design/Plan prep	<input checked="" type="checkbox"/> _60_ Other -
<input type="checkbox"/> Bridge Construction	<input type="checkbox"/> _100%
<input type="checkbox"/> Bridge Maintenance	
<input type="checkbox"/> Overload/Superload	

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

a. List Ohio PE # 71772 b. Name Melinda C. Chase, P.E.

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

- Name: _____

- Yrs. Inspection related experience: _____

- List courses attended (& approx dates) _____

D. INSPECTION EQUIPMENT

1. Type of vehicle used for inspections

X 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	<input checked="" type="checkbox"/> _Y_	Length	<input checked="" type="checkbox"/> _15_	First Aid Kit	<input checked="" type="checkbox"/> _Y_
6' Folding Rule	<input checked="" type="checkbox"/> _Y_			Wire Brush	<input checked="" type="checkbox"/> _Y_
100' Fiberglass Tape	<input checked="" type="checkbox"/> _Y_			Calipers	<input type="checkbox"/> _N_
Geologist Hammer	<input checked="" type="checkbox"/> _Y_			Shovel	<input checked="" type="checkbox"/> _Y_
Inspection Mirror	<input checked="" type="checkbox"/> _Y_			Screw Driver	<input checked="" type="checkbox"/> _Y_
Flashlight	<input checked="" type="checkbox"/> _Y_			Pliers	<input checked="" type="checkbox"/> _Y_
Thermometer	<input type="checkbox"/> _N_			Wrenches	<input checked="" type="checkbox"/> _Y_
Plumb Bob	<input checked="" type="checkbox"/> _Y_			Sounding Chains	<input type="checkbox"/> _N_
Camera	<input checked="" type="checkbox"/> _Y_			Hip Boots and Waders	<input checked="" type="checkbox"/> _Y_
2'-0" Level	<input checked="" type="checkbox"/> _Y_			Paint Stick/Crayon	<input checked="" type="checkbox"/> _Y_
Brush Hook/Axe	<input checked="" type="checkbox"/> _Y_			Scraper	<input checked="" type="checkbox"/> _Y_
Boat	<input type="checkbox"/> _N_				

Probing Rod _Y_
Other equipment not listed above

Vertical Clearance Rod _Y_

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

Dye penetrant; Magnetic particle; Ultrasound; Other _____

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

Step ladder, extension ladder, climbing gear, scaffolding

6. Use of equipment (Metric 16)

a. How many bridges need a snoopers? 0

b. How many bridges is it used on? 0

c. How often? N/A

E. INSPECTION PROCEDURES

1. Approximately how many inspections were made during last calendar year? (Metric 6) 150

2. Approximately how many inspections are scheduled for the current calendar year? (Metric 6) 150

3. Average number of inspections per day (Metric 6) 17

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

a. Beam/Girder: Simple Span: 0.3 hrs. Multi-span: 0.75 hrs.

b. Slab bridge: Simple Span: 0.3 hrs. Multi-span: 0.5 hrs.

c. Truss (pony): Simple Span: 1 hrs. Multi-span: N/A hrs.

d. Through/deck): Simple Span: N/A hrs. Multi-span: N/A hrs.

e. Culvert: Single cell 0.25 hrs. Multiple Cells: 0.5 hrs.

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

Are bridge inspections recorded in field on Paper, or Electronically, or Both?

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

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

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

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

Are previous bridge comments brought to the bridge? (Yes No) (If no, why not)

6a. Are the bridge plans carried to the bridge site for review? (Metric 15). (Yes No)

6b. 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: Program Manager and County Engineer's Staff review severe conditions and roadway characteristics to determine need.

8. Do you have bridges requiring inspection more frequently than 12 Months? (Yes No)

 Number due to **Damage** List frequency of inspection. (Metric 11)

 Number needing **In-depth** List frequency of inspection. (Metric 11)

 Number of **Special insp.** 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)

Hammontree & Associates, Limited has several internal Quality Assurance checks. All inspections are reviewed by professional engineers. An effort is made to ensure that a

different engineer is inspecting the structure each year. Inspection data is entered into AssetWise as inspections are completed. It is reviewed as soon as possible so any questions/clarifications can be made in the field. Noble County has adopted a QA procedure to independently review inspections each year. A copy of this procedure is attached.

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

Yes ___ No X (Assetwise check)

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

Yes ___ No X (Assetwise check)

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

Initial Inspection? (Yes X No ___)

Routine Annual Inspections? (Yes X No ___)

Special Inspections? (Yes X No ___)

Underwater Inspections? (Yes X No ___)

Fracture Critical Inspections? (Yes X No ___)

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

1. No. of bridges considered scour susceptible? (Service over Water) Number 150.

2. Number of bridges inspected by probing? Number 75.

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

4. Are Plans of Action (POA) complete and implemented for all bridges coded "Scour Critical"? (Metric 18) Yes ___ No ___ If no, Why? _____

5. How many structures are coded 6 on item 113 Scour Critical? (Metric 18) Number 0.

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

Evaluations are made by field personnel

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

Program Manager and County Engineer based on field conditions.

G. INVENTORY

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

Who checks? Inspector

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

Changes to inventory items are noted at time of inspection. AssetWise is updated as soon as internet connection is available.

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

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

3. How is the inventory data input into Assetwise?

X 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 X NO

Changes from new construction or rehab? YES X NO

Changes are uploaded as soon as internet connection is available.

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 X Number 27: If, No, Why not? NA

b. Bridges requiring underwater inspections.

Number 0 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.

- Bridge Files.....email a copy of a typical file or have them on hand for inspection.
- Scour Critical POA.. email a copy of a typical file or have them on hand for inspection.
- Fracture Critical Plan.. email a copy of a typical file or have them on hand for inspection.
- UW inspection Procedure.. email a copy of a typical file or have them on hand for inspection.

H. PROCEDURES

1. Are new maintenance problems identified during bridge inspection?

(Y X N) (Metric 15)

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. _____

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

County bridge Engineer

Bridge Superintendent

Sherriff

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

Explain if different than procedure in Assetwise County is notified immediately via telephone. Critical Findings are documented in AssetWise (in the field), via e-mail, and in the inspection binder. Please see attached Critical Findings Procedure.

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

Documented in AssetWise, then recorded in the inspection binder _____

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

Number of bridges posted 33. Number of bridges with posted Signs in the field 33.

10. List bridges closed due to condition rating (rough check) 0

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

0

12. Number of NBIS bridges with Gusset Plates (Metric 13) 16

13. Number of NBIS bridges with Gusset Plates analyzed. (Metric 13) 16

14. 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

• 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

- Scour POA:
 - On paper file in Office
 - Electronically
 - In Assetwise
 - All three
 - Other

- 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: N/A
 - 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

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.

15. What is the FC bridge inspection frequency? (Metric 16) Every 24 Months
16. Is the FC Plan completed for all FC bridges? (Metric 16) (Yes X No)
17. Are the FCM Identified in the FC Plan? (Metric 16) (Yes X No)
18. What is the underwater inspection frequency? (Metric 17) Every N/A Months
19. Are the underwater elements identified and located? (Metric 17) (Yes No)
20. List any complex bridges: (Metric 19)
None
21. Do the complex bridges require specialized inspection procedures and additional inspector training? (Metric 19) (Yes No X)

Describe:

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:

NOB-C0020-0822_(6130372) Steel Beams

Item 58 Deck.....6 Agreed
Item 59 Superstructure.....6 Agreed
Item 60 Substructure.....5 Agreed
Item 61 Channel.....6 Agreed
 Item 61.01 Scour.....7 Agreed
Item 62 Culvert.....N
Item 36 Railing..... 0 0 1 0
Item 72 Approach Alignment6 Agreed
Comments: [Great Comments](#)
Defect Photos: [Great Defect Photos](#)
Channel Photos: [Good Channel Photos](#)

NOB-T0003-0248_(6131085) Steel Culvert

Item 58 Deck..... **N**
Item 59 Superstructure..... **N**
Item 60 Substructure.....**N** Agreed
Item 61 Channel.....**6** Agreed
 Item 61.01 Scour.....**7** Agreed
 Item 62 Culvert.....**5** Agreed
Item 36 Railing.....N N N N Agreed
Item 72 Approach Alignment**6** Agreed
Comments: [Great Comments](#)
Defect Photos: [Great Defect Photos](#)
Channel Photos: [Good Channel Photos](#)

NOB-C0008-0244_(6135072) Prestressed Box beams

Item 58 Deck..... **4** Agreed See Super remarks.
Item 59 Superstructure.....**4** Maybe. This is a case where adhering to the manual yields a 4, but judgement might render a different rating. According to the inspection manual table for Prestressed Concrete, this Super should be a 4, due to excessive joint leakage and efflorescence. However, there is no spalling, or exposed strands, the concrete is solid. While there is leakage, the appearance seems to be free of deterioration. I would be rating this a 5 or maybe higher. It is possible the beam tops are in poor condition, but that is impossible to determine visually. I would recommend coring the beam tops to determine the condition before programming this bridge for any rehabilitation or replacement.
Item 60 Substructure.....**7** Agreed
Item 61 Channel..... **5** Agreed

Item 61.01 Scour..... 7 Agreed
 Item 62 Culvert..... N
 Item 36 Railing 0 0 0 0 Agreed
 Item 72 Approach Alignment8 Agreed
 Comments: [Great Comments](#)
 Defect Photos: [Great Defect Photos](#)
 Channel Photos: [Good Channel Photos](#)

NOB-C0040-0241_(6130437) Steel Truss

Item 58 Deck.....5 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..... 1 0 0 0 Agreed
 Item 72 Approach Alignment8 Agreed
 Comments: [Excellent Comments](#)
 Defect Photos: [Great Defect Photos](#)
 Channel Photos: [Good Channel Photos](#)

NOB-C006A-0020_(6134858) Concrete Slab



This is coded as a Slab bridge, but it a through girder bridge, as the main reinforcing steel runs laterally from girder to girder and not along the centerline. Hopefully the load rating is based on what is in the girders as well as the slab.

Item 58 Deck..... 5 Agreed
 Item 59 Superstructure.....5 Agreed
 Item 60 Substructure.....6 Agreed
 Item 61 Channel..... 6 Agreed
 Item 61.01 Scour..... 7 Agreed
 Item 62 Culvert..... N Agreed
 Item 36 Railing..... ± 0 0 0 0 Parapet/girder, as a railing is not standard.

Item 72 Approach Alignment5 [Agreed](#)
Comments: [Excellent Comments](#)
Defect Photos: [Great Defect Photos](#)
Channel Photos: [Channel Photos would be better if taken from further upstream and down.](#)

NOB-C0006-0024_(6135013) **Steel Stringer**

Item 58 Deck.....5 [Agreed](#)
Item 59 Superstructure.....4 [Agreed](#)
Item 60 Substructure.....5 [Agreed](#)
Item 61 Channel.....4 [Agreed](#)
 Item 61.01 Scour..... 6 [Agreed](#)
Item 62 Culvert.....N [Agreed](#)
Item 36 Railing..... 1 0 0 0 [Agreed](#)
Item 72 Approach Alignment8 [Agreed](#)
Comments: [Excellent Comments](#)
Defect Photos: [Great Defect Photos](#)
Channel Photos: [Great Channel Photos](#)

NOB-T0533-0001_(6134017) **Steel Girder**

Item 58 Deck.....6 [Agreed](#)
Item 59 Superstructure.....4 [Agreed](#)
Item 60 Substructure.....4 [Agreed](#)
Item 61 Channel.....7 [Agreed](#)
 Item 61.01 Scour.....7 [Agreed](#)
Item 62 Culvert.....N
Item 36 Railing..... 0 0 0 0 [Agreed](#)
Item 72 Approach Alignment 6 [Agreed](#)
Comments: [Excellent Comments](#)
Defect Photos: [Great Defect Photos](#)
Channel Photos: [Good Channel Photos](#)

Field Review Summary:

Noble County is doing a very good in their bridge inspection program. The comments and defect photos are textbook quality. Most every Channel photo is within FHWA parameters, with only a couple needing improvement, having too much vegetation obscuring the view, or not quite far enough upstream or down on some is the common problem.

PART III Office file Review

Fracture critical bridges: Noble County has a total of 16 FC bridges

Fracture Critical Member and Fatigue Prone Connection ID Plan.
NOB-T0444-0010 (6134475)

Bridge Load Rating Report, including Gusset plate analysis.
BR1 CR48-ELK Twp (6131093)

Underwater inspections: Noble County has no underwater inspections.

POA for Scour: Noble County has a POA set up.

Scour susceptible bridges: Noble County 150 scour susceptible bridge and 75 are probed to detect scour.

Critical findings: Noble County has a critical finding flow chart in place, if needed.

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

NOBLE County 2022					
INVENTORY, APPRAISAL & INSPECTION SNAPSHOT					
12/20/2022					
Inventory Data - NBIS Bridges Only					
				<u>NBIS COUNT</u>	
NBIS Bridges > 20'				98	
Bridges 10'-20'				51	
All Bridges				149	
Item 221 Inspection Responsibility					
			<u>CODE</u>	<u>#NBIS</u>	<u>#ALL</u>
Data Tab	Col B\,B\w\	County	2	98	149
Item 21 Maintenance responsibility					
			<u>CODE</u>	<u>#NBIS</u>	<u>#ALL</u>
Data Tab	County		2	98	149
Col D	City or other local		4	0	0
	Railroad		27	0	0
	Private (tohter than RR)		26	0	0
	State Park		11	0	0
	Local Park		23	0	0
	State Agency		1	0	0
	Township		3	0	0
				98	149
Item 42A Type service on bridge					
			<u>CODE</u>	<u>#NBIS</u>	<u>#ALL</u>
Data Tab	Other		0	0	0
Col Q	Highway		1	98	149
	Railroad		2	0	0
	Ped/Bikeway		3	0	0
	Hwy/RR		4	0	0
	Hwy/Ped		5	0	0
				98	149
Item 42B Type service under bridge					
			<u>CODE</u>	<u>#NBIS</u>	<u>#ALL</u>
Data Tab	Other		0	0	0
Col R	Hwy w/ or w/o Ped		1	0	0
	Railroad		2	0	0
	Ped/Bkwy		3	0	0
	Hwy w/ RR		4	0	0
	Waterway		5	98	149
	Hwy/Waterway		6	0	0
	RR/Waterway		7	0	0
	Hwy/Waterway/RR		8	0	0
	Relief (for waterways)		9	0	0
				98	149

All data is complete and correct in this section.

ITEMS 43A,B,C Structure Type		Data (Col M,N,O)	CODE	#NBIS	#ALL
Other Culvert (incl frame culverts)			019	1	1
Concrete Slab			101	3	6
Concrete Tee Beam			104	2	2
Concrete Frame			107	1	25
Concrete Culvert (incl frame culverts)			119	0	4
Concrete Continuous Slab			201	3	3
Steel Beam or Girder			302	44	60
Steel Girder w/ Floor System			303	9	9
Steel Thru Truss (includes Pony)			310	16	16
Steel Culvert (incl frame culverts)			319	9	12
Steel Continuous Beam or Girder			402	5	6
Prestr. Conc. Cont. Box Beam/Girder Multiple			505	4	4
Prestr. Conc. Cont. Box Beam/Girder Multiple			605	1	1
				98	149
Item 92A Fracture Critical					
			CODE	#NBIS	#ALL
Data Tab	Requires FC Inspection		Y	26	n/a
Col U,V,Y	Requires FC Inspection		N	72	n/a
				98	n/a
			FC Switch Y/N is Blank	0	n/a
Item 113 Scour					
				#NBIS	#ALL
Data Tab	Bridge not over waterway		N	0	0
Col AA	unknown foundation		U	0	0
	over tidal waters		T	0	0
	foundations on dry land		9	0	0
	stable above footing		8	37	56
	countermeasures installed		7	4	6
	no scour evaluation made		6	0	0
	stable within footer limits		5	55	83
	stable action needed		4	2	4
	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
				98	149

NOB-T0034-00.02_(6132480) NOB-C0031-01.90_(6131019)
NOB-C0062-0080_(6135161) NOB-T0120-0575_(6134378)

The bridge above has 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 (Item 113) 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			9	n/a
			BR_100 for these bridges?		
Item 92B Underwater		CODE		#NBIS	#ALL
Data Tab	requires dive inspection	N		98	n/a
Col W,X,Z	requires dive inspection	Y		0	n/a
				98	
Item 709 Plan Information		CODE		#NBIS	#ALL
Data Tab	plans not avail	0		5	5
Col. AW	plan avail	1		63	104
	field measured	2		30	40
	Field Testing	3		0	0
	not applicable	N		0	0
				98	149
Item 63 Method of Analysis		CODE		#NBIS	#ALL
Data Tab	Field Eval & Doc. Engr Judgment	0		9	11
Col. AV	Work Stress	1		0	0
	LFR	2		0	0
	LRFR	3		0	0
	load test	4		0	0
	No rating done	5		0	3
	LFR	6		58	85
	AS	7		29	40
	LRFR	8		2	9
	Assigned LFR HS20	D		0	0
	Assigned LRFR HL93	F		0	1
	not appl (RR, etc)	X		0	0
				98	149
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	67	116
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	0
	closed for load cap. reason	K	0	0
	Posted for load capacity	P	31	33
	Posted for other than load	R	0	0
	Closed for other than load	X	0	0
			98	149

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?	1
Col. AP	"0" used instead of blank	0
Col. AT	% legal <=> lowest RF	1
Col. AV	Item 70 correct?	2
Col. AW	Method of Rating Alike?	0
Col. AX	Op & Inv RF in Tons as req'd?	0
Col. AY	Item 575 correct?	0
Col. AZ	Depth of fill completed?	0

NOB-C0012-0114_(6130291) Legal load controlled by EV3 at 85% legal

NOB-C0075-0066_(6130194) See Column S Should be coded P

NOB-C0075-0066_(6130194) NOB-C0053-0005_(6131206) See Column U it doesn't match % in Column T
See Load Rating TAB in Snapshot files.

All 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 Qualification (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	0	100.0%	(C)
METRIC 10 - Insp. Frequency FC Member					
FC Inspections Overdue		# OVERDUE	# FC	% PASS	COMPLIANCE
Data Tab	Col. Y 24 months	0	26	100.0%	(C)

All data is complete and correct in this section.

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.

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	98	100.0%	(C)
Adequacy comments **		0	30	100.0%	(C)
		Error	Total Scour	% PASS	
Comment	Rating should be = Scour	0	98	100.0%	within tolerance +/- 1
Tab	Noncompliant Scour Rating Err	0	98	100.0%	(C)
METRIC 14 - Posting		Load rating data tab			
From Files review		# errors	#sampled	% PASS	COMPLIANCE
Op RF < 3 tons but not closed		0	98	100.0%	(C)
Op RF = 0 but not closed		0	98	100.0%	(C)
% Legal < 100 but not posted		1	98	99.0%	(SC)
Item 41 = B		0	98	100.0%	(C)

NOB-C0075-0066_(6130194) See Load rating TAB

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					
		** based on results of Field Review				

Noble County is doing an outstanding job with their bridge program and is 100% in compliance with all 23 FHWA metrics.