

Quality Assurance Review Bridge Inspection Program

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.

Instructions for completing form: Please fill out checklist prior to scheduled review. Brief answers are desired; fill the items out to the best of your ability.

Agency Reviewed: Summit County Engineer (SCE)

Checklist completed by: Robert Hochevar, P.E. Date: September 5, 2019

I. MAINTENANCE, REHABILITATION AND REPLACEMENT PROGRAM

A. NUMBER OF BRIDGES WITH MAINTENANCE RESPONSIBILITY

1. Greater than 20' long (NBIS length 23CFR 650c) (Metric 22) 152
2. Bridges $\geq 10'$ and $\leq 20'$ long (Metric 22) 131

B. PROCEDURES AND BUDGET

1. Contract repairs and replacement
 - List typical work items Waterproof and resurface, bridge rail upgrades, deck replacements/overlays and bridge replacements.
 - List approximate annual \$3,100,000
 - Are Fed Funds used? Yes – LBR
 - Are Credit Bridge funds used? Yes, \$255,000 anticipated in 2019
2. In-house repairs and replacements
 - List typical work items Bridge washing, brush removal, ditch cleaning, concrete & steel repairs, railing & joint repair & replacement, bank stabilization, sign maintenance.
 - List approximate annual budget \$500,000
 - List staffing availability Supervisor, crew leader, three (3) bridge workers.
3. How are projects identified and selected?
Deficiencies and needed maintenance/repair items are identified and noted on the bridge field inspection reports by bridge inspectors during the annual bridge

inspections. Emergency and higher priority items are brought to the attention of the Program Manager in a timely manner. The inspectors' Supervisor reviews / confirms the identified items before forwarding on to the Program Manager. The Program Manager reviews / confirms the identified items and then compiles a master list during the review / approval of the field inspection reports for each bridge. The list is supplemented by field visits by the Program Manager as needed. Projects are then prioritized and selected as budget limitations permit.

Bridge replacement and rehabilitation projects by contract are identified and selected based on: Safety, ADT / ADTT, General Appraisal & Operating Status, Safe Load Capacity, Sufficiency Rating and Highway Functional Type.

4. How are plans developed for emergency repairs?

Emergency repair strategies are developed organically by involving the appropriate in-house engineering disciplines and members of the Public Works (maintenance) Department. If feasible, plans are developed in-house. If not, engineering consultants are engaged. Alternately, a design-build contract may be pursued.

5. Who does the work of emergency repairs?

Depending upon the scope of the repairs, emergency work is completed by in-house maintenance crews or a specialty contractor.

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

Repair work is documented by a Request for Service (Work Order) log, daily time sheets and digital photographs.

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

See attached SCE Bridge Emergency Action Plan. (Attachment #1)

II. INSPECTION PROGRAM (SMS Data will be utilized)

A. NUMBER OF BRIDGES WITH INSPECTION RESPONSIBILITY

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

152

2. Between 10' and 20' long (including 10' & 20') (ORC 5501.47, 5543.20) (Metric 22)

131

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: Robert A. Hochevar, P.E.
- Yrs. Inspection related experience: 37
- List courses attended (& approx. dates)
 - Element Level Bridge Inspection Training, April 2015
 - ODOT Manual of Bridge Inspection Update, March 2011
 - ODOT Bridge Inspection Training, March 1990
 - FHWA Stream Stability & Scour at Highway Bridges, October 1991
 - ODOT Bridge Inspection Training, April 1987
 - George Washington Univ Highway Bridges: Inspecting, Rating & Upgrading, February 1987
 - George Washington Univ Underwater Inspection & Repair of Bridges, February 1987
 - FHWA Practical Bridge Inspection Training, November 1983

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

- Name: Robert A. Hochevar, P.E.
- Yrs. Inspection related experience: See above
- List courses attended (& approx. dates) See above

Since Robert A. Hochevar, P.E., is the Program Manager and the Reviewer for the Summit County Engineer Bridge Inventory, **Program Manager** in this document refers to both Program Manager and Reviewer as appropriate.

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

- Name: Brian Conley
- Yrs. Inspection related experience: 24 years with Summit County Engineers
- List courses attended (& approx. dates)
 - Bridge Insp. Refresher Training, June 2018
 - SMS Training, Feb 26-27, 2013
 - Bridge Inspection Level 2, Apr. 2011
 - Bridge Inspection Level 2, Nov. 2004
 - Bridge Inspection Level 1, Feb. 1999

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

%TIME

<u>40</u> Bridge/Culvert inspection	<u> </u> Surveying
<u> </u> Bridge Design/Plan prep	<u>24</u> Other – Roadway Constr. Insp
<u>35</u> Bridge Construction	<u> </u> 100%
<u> </u> Bridge Maintenance	
<u>1</u> Overload/Superload	

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

- Name: George Kamvouris
- Yrs. Inspection related experience: 29 years with Summit County Engineers
- List courses attended (& approx. dates)
 - Bridge Insp. Refresher Training, Aug. 2018
 - SMS Training, Feb 26-27, 2013
 - Bridge Inspection Level 2, Apr. 2011
 - Bridge Inspection Level 2, Apr. 2005
 - Bridge Inspection Level 1, Feb. 1999

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

%TIME

<u>40</u> Bridge/Culvert inspection	_____ Overload/Superload
_____ Bridge Design/Plan prep	_____ Surveying
_____ Bridge Construction	<u>60</u> Other – Roadway Constr. Insp.
_____ Bridge Maintenance	_____ 100%

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

- Name: Roger Boltz
- Yrs. Inspection related experience:
 - 3 years with Summit County Engineers
 - 17 years with ODOT

- List courses attended (& approx dates)
 - Bridge Insp. Refresher Training, June 2018
 - SMS Training, Feb 26-27, 2013
 - Bridge Inspection Level 2, Apr. 2011
 - Bridge Inspection Level 2, Mar. 2006
 - Bridge Inspection Level 1, Feb. 2005

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

%TIME

<u>40</u> Bridge/Culvert inspection	_____ Overload/Superload
_____ Bridge Design/Plan prep	_____ Surveying
<u>35</u> Bridge Construction	<u>25</u> Other – Roadway Constr Insp.
_____ Bridge Maintenance	_____ 100%

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

- Name: Phil Richards
- Yrs. Inspection related experience:
9 years with Summit County Engineers
Additional 20 year on Summit County Engineers bridge maintenance crew
- List courses attended (& approx. dates)
Bridge Insp. Refresher Training, June 2018 ✓
Bridge Inspection Level 2, 2014
Bridge Inspection Level 1, Nov. 12-14, 2013

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

%TIME *Note - Phil Richards transferred to the Summit County Engineers Maintenance Dept. in June 2019, but will be available to inspect bridges as-needed.*

<u>30</u> Bridge/Culvert inspection	<u> </u> Overload/Superload
<u> </u> Bridge Design/Plan prep	<u> </u> Surveying
<u>30</u> Bridge Construction	<u>40</u> Other – Roadway Constr. Insp.
<u> </u> Bridge Maintenance	<u> </u> 100%

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

- Name: Dave Smith
- Yrs. Inspection related experience:
28 years with Summit County Engineers
- List courses attended (& approx. dates)
Bridge Insp. Refresher Training, Aug. 2018 ✓
Intro to Element Level Bridge Insp., April 2014
SMS Training, Feb. 2013
Ohio's Comprehensive Bridge Insp. School, Mar. 2001
Basic Bridge Insp. Training, Jan. 26-28, 1999

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

%TIME *Note – Dave Smith, Bridge Inspection Team Manager, (Cursory Reviewer) performs cursory reviews of the field inspection reports prior to the Program Manager's review and approval. Following % time is mainly as a reviewer / supervisor:*

30 Bridge/Culvert inspection
 Bridge Design/Plan prep
30 Bridge Construction
 Bridge Maintenance

 Overload/Superload
 Surveying
40 Other – Roadway Constr. Insp.
 100%

8. **Team Member** of bridge inspection team (Include information for each additional team member – copy and paste as needed). List qualifications/yrs. experience (bridge inspection experience)

- Name: Tom Fosnaught
- Yrs. Inspection related experience: 3 years with Summit County Engineers
- List courses attended (& approx. dates)
 - Bridge Inspection Level 2, Oct. 2017
 - Bridge Inspection Level 1, Sept. 2017

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

%TIME

40 Bridge/Culvert inspection
 Bridge Design/Plan prep
 Bridge Construction
 Bridge Maintenance

 Overload/Superload
 Surveying
60 Other – Roadway Constr Insp.
 100%

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

a. List Ohio PE # Robert A. Hochevar, P.E. 51352

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

- Name: Capt. Travis M. Clower, MBA, P.E., Owner - Integrity Aquatic, Inc.
- Yrs. Inspection related experience: 26
- List courses attended (& approx. dates)
 - NHI Bridge Inspection Refresher Training, October 2017
 - NHI Safety Inspection of In-Service Bridges, March 2002
 - NHI Bridge Inspection Refresher Training, October 2012
 - NHI Underwater Bridge Inspection, July 2013

C. INSPECTION EQUIPMENT

1. Type of vehicle used for inspections
 - ½ Ton, 4WD extended cab pickup truck
 - Bridge snooper (ODOT & Rental) as required
 - Bucket truck

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

	Yes/No		
Extension Ladder	<u>N*</u>	First Aid Kit	<u>Y</u>
what length?	<u>—</u>	Wire Brush	<u>Y</u>
6' Folding Rule	<u>Y</u>	Calipers	<u>Y</u>
100' Fiberglass Tape	<u>Y</u>	Shovel	<u>Y</u>
Geologist Hammer	<u>Y</u>	Screw Driver	<u>Y</u>
Inspection Mirror	<u>Y</u>	Pliers	<u>Y</u>
Flashlight	<u>Y</u>	Wrenches	<u>N</u>
Thermometer	<u>Y</u>	Sounding Chains	<u>Y</u>
Plumb Bob	<u>Y</u>	Hip Boots and Waders	<u>Y</u>
Camera	<u>Y</u>	Paint Stick/Crayon	<u>Y</u>
2'-0" Level	<u>Y</u>	Scraper	<u>Y</u>
Brush Hook/Axe	<u>Y</u>	Probing Rod	<u>Y</u>
Boat	<u>N**</u>	Vertical Clearance Rod	<u>N**</u>

* A 12' folding ladder is carried by the inspection team. Extension ladders up to 24' are available as-needed.

** Available as-needed.

3. List types of NDT methods used (I.E. dye penetrant, magnetic particle, ultrasound)
 A dye penetrant kit, available as-needed. Ultrasonic testing has been performed by consultants on the AKR 008 0908, SFN 7730306, gusset plates and pins.

4. How is usage determined?
 As determined by inspection team leader.

5. List additional items
 Laptop computers
 Cellular phones with cameras
 Laser measuring device

Following equipment is available as-needed:

- Trimble handheld GPS unit
- 12' aluminum boat with electric motor (shared with inflatable boat) & trailer
- 11' Inflatable boat.

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

FCM inspections are performed by qualified staff and / or consultants using ladders, rental snoopers and adapted rock-climbing techniques.

7. Use of equipment (Metric 16)
- a. How many bridges need a snoopers? 10 (including 7730306 during FC Inspection)
 - b. How many bridges is it used on? 10 (including 7730306 during FC Inspection)
 - c. How often? Five-year frequency for 9 bridges (two-year frequency for 7730306 during FC Inspection)

D. INSPECTION PROCEDURES

1. Approximately how many inspections were made during last calendar year? (Metric 6)
316

2. Approximately how many inspections are scheduled for the current calendar year? (Metric 6) 285

3. Average number of inspections per day (Metric 6) 2.5

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

- a. Beam/Girder 3.0
- b. Slab 2.5
- c. Truss (pony/through/deck) 8.0
- d. Culvert 2.0

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

Are bridge inspections recorded in field on paper or electronically? Please describe: Inspections are recorded on paper under the bridge, then entered into SMS at the office.

Are photos available for every bridge? (Yes X No ___)

Are photographs taken of defects during inspection? (Yes X No ___)

Are Bridge comments recorded? (Yes X No ___) Where? In SMS with the field inspection report and with photos uploaded to the SCE computer network and SMS.

Are bridge comments brought to the bridge? (Yes X No ___)

6. Are the bridge plans carried to the bridge site for review if necessary or are they readily available for review in the bridge office? (Metric 15)

- a. Bridge site (Yes X* No ___) * as-needed

b. Bridge office (Yes No)

7. Who determines the need for a routine inspection frequency greater than once Annually, and what criteria is used? (Metric 6) Program Manager based on input from inspectors, reviewer and/or consultants or based on condition rating and photos supplemented by field check by Program Manager or Cursory Reviewer.

8. List bridges requiring inspection more frequently than one-year intervals (DAMAGE, IN-DEPTH, SPECIAL INSPECTIONS). List frequency of inspection. (Metric 11)
SFN 7735138, Wright Rd over Pigeon Creek, Bridge # COP-206-0150
Three- month frequency until replaced.

9. Does the inspection team believe it has enough time to do the job?
(Yes No)

10. What kinds of quality assurance checks are made of the inspection process? (Metric 20)
See attached SCE QC/QA Procedure. (Attachment #2)

In addition, since 2016, a consultant performs the annual inspection of a select number of bridges (Yr 2016 – 104 bridges, Yr 2017 - 84 bridges, Yr 2018 - 23 bridges, Yr 2019 - 72 bridges, Yr 2020 – number of bridges to be determined). The consultant provides observations and recommendations in regard to the differences in condition ratings and comments between Arcadis versus Summit County.

11. Do any bridges have underwater inspections done in less than 60 month intervals?
(Metric 8)

Yes, only one as of the June 2019 UWI:
SFN 7751001, Highland Rd over Cuyahoga River, SAG-111-0000 (36 month frequency) until scour repairs are complete.

12. Have all bridges requiring underwater inspections been inspected in 60 month intervals? (Metric 8)
Yes

13. Do any bridges have fracture critical inspections done in less than 24 month intervals? (Metric 10)
No *N/A*

14. Have all bridges requiring fracture critical inspections been inspected in 24 month intervals? (Metric 10)
Yes

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

Initial Inspection? (Yes No)

Routine Annual Inspections? (Yes X No ___)

In-Depth Inspections? (Yes X No ___)

Underwater Inspections? (Yes X No ___)

Fracture Critical Inspections? (Yes X No ___)

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

1. How many bridges are considered scour susceptible? (Type of Service over Water)
278

2. How many bridges are inspected by probing?
261

3. How many structures are Scour Critical (item 113 - 3, 2, 1 or 0)? (Metric 18)
0

4. Are Plans of Action (POA) complete and implemented for all bridges coded "Scour Critical"? (Metric 18)
N/A

5. How many structures are coded 6 on item 113 Scour Critical? (Metric 18)
9

6. How are scour evaluations performed? (Metric 18)
Per ODOT Scour Assessment Procedures.

7. Who determines the need for diving inspections and by what criteria?
Program Manager. All bridges with five feet or greater normal water depth and bridges where probing and visual inspection is insufficient to determine physical condition of substructure members.

F. INVENTORY

1. What kinds of inventory quality assurance checks are performed? (Metric 22)
See attached QA/QC Procedure. (Attachment #2)

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

3. How is the inventory data input into the system?
Inventory data is input into SMS as-required by Team Leader, Program Manager or qualified consultant.

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

Changes discovered during inspection?

Annually or sooner. The inventory is updated as the inspection reports are reviewed submitted. Inspection updates are sent as-required throughout the year.

180 day max.

Changes from new construction or rehab?
Within 90 days of opening to traffic.

5. NBIS requires that the inspecting organization maintain master lists of the following:
(Provide a list of these bridges) (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)
- 1) SFN 7730306, N. Main St over Cuyahoga River, AKR-008-0908
 - 2) SFN 7732201, Bath Nature Trail over North Fork, BAT-TP-0000 *

**This bridge will be removed from the inventory since it does not carry vehicular traffic on the bridge and there is no vehicular traffic under the bridge.*

- b. Bridges requiring underwater inspections
16 total (See attached Underwater Inspection List – Attachment #3)
- b. Bridges with unique or special features (i.e., pin & hanger, draw, suspension)
None

Note: An examination of the files will be performed during the review.

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

G. PROCEDURES

1. Are new maintenance problems identified on the bridge inspection form?
(Y X N ___) On another form? (Yes X No ___) (Metric 15)

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

Inspectors notify the Program Manager or Cursory Reviewer verbally or by email, and also by notation on the inspection report. The Program Manager or Cursory Reviewer usually performs a site visit and then the Program Manager completes a Request for Service as required.

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

Use SMS C.F. Report

Critical Findings found during an inspection are addressed in accordance with the Critical Findings Flowchart and Actions as defined in the ODOT Manual of Bridge Inspection. Critical Findings that are determined to be an emergency are also addressed as such per SCE's Bridge Emergency Action Plan.

The Program Manager or Cursory Reviewer is initially contacted directly by the Team Leader. The Program Manager is always contacted ASAP by the Cursory Reviewer if the Cursory Reviewer was initially contacted by the Team Leader.

How is this emergency action documented?

Documentation of an emergency *action* is dependent on the emergency.

The following documentation methods are used:

- The Bridge Inspection Field Report
- Critical Findings Report
- Emails
- IOC
- Bi-weekly Bridge Section Activity Report
- Meeting minutes
- Request for Service (RFS), RFS logs, daily time sheets and digital photographs
- Contract documents and construction inspection records

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

On the Inspection Field Report, Critical Findings Report and also on the SCE Bridge Inventory List.

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

Bridge Inspectors, Bridge Cursory Reviewer, Bridge Program Manager, and Bridge Maintenance Manager.

H. LOAD ANALYSIS AND POSTING

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

143 of 152

2. Number of plans for non-NBIS bridges ($\geq 10'$ and $\leq 20'$ long)

98 of 131

3. Number of bridges analyzed in accordance with the *AASHTO Manual for Bridge Evaluation* (Metric 13)

Estimate 212 total (75% of 283)

4. By Whom (Metric 13)

Summit County Engineers and Consultants

5. When

Various dates

6. Methods used (Metric 13)

Various methods

7. When are bridges rerated and how do load raters keep up with overlays and other changes? (Metric 13)

Bridges are rerated based on the following reasons:

- A. The superstructure is replaced
- B. The existing deck is replaced with a new deck
- C. The existing deck width has changed or there is an addition of new beam(s) or girder(s) in the cross-section
- D. There is a change in the dead load on the superstructure, like addition or removal of wearing Surfaces, addition or removal of sidewalks, parapets, railings, etc.
- E. There is a physical change in the condition of a structural member of the bridge, which may change the capacity of the structural member
- F. Rusting or damage to a slab, beam, girder or other structural element has resulted in section loss and change in capacity
- G. There is structural damage to steel, due to a hit by a vehicle or excessive deflection or elongation under temperature or highway loads
- H. The inspection GA rating drops below 5 and every time it drops any step further below
- I. When exposed or broken prestressing strands are discovered. For each broken or exposed strand, consider the adjacent strand(s) in the same row as ineffective
- J. When a bridge is rated based on "Documented Engineering Judgment and Field Evaluation" and the GA rating drops a step

New overlays, damage and other changes requiring a rerating are noted on the inspection report when discovered and also by other means and individuals as the changes occur. The PM and Cursory Reviewer stay informed about SCE resurfacing and other projects and notification of potential changes requiring rerating by attendance at a weekly construction meeting and bi-weekly projects meeting at a minimum.

8. Number of NBIS length bridges not load rated (Metric 13)

0

9. List the NBIS length bridges considered "not ratable" including reason for being considered "not ratable" (Metric 13)

0

10. Number of NBIS length bridges load posted (Metric 14)

15

11. How determined (engineering judgment, analysis, mix)

Mix

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

1 (SFN 7735146, Cleve-Mass Rd over Barberton Reservoir, Bridge # COP-017-1141)

13. List bridges rated less than 100% Ohio legal load and not physically load posted, and resolution

0

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

2 (However, SFN 7732201 will be removed from the inventory since it does not carry vehicular traffic on the bridge and there is no vehicular traffic under the bridge.)

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

2 (However, SFN 7732201 will be removed from the inventory since it does not carry vehicular traffic on the bridge and there is no vehicular traffic under the bridge.)

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

- Inspection reports, including old inspections Program Manger's office.
- Design Calculations With design file in Program Manager's office or in archives.
- Plans On SCE network and in SMS, Hard copies in fireproof plan file cabinet.
- Load analysis calculations Program Manager's office and SCE network.
- Inventory forms In SMS. Hard copy BM-191s are kept in Program Manager's office.
- Photos and sketches Project Manager's office, SCE network, in SMS and in archives.
- Repairs and maintenance history Program Manager's office, SCE network and Public Works Department tracking system.
- Scour evaluation Documented in SMS.
- Scour POA N/A
- Fracture Critical File Program Manager's office, SCE network and in SMS.
- Load Posting/Closing Program Manager's office, SCE network and in SMS.
- Underwater inspections Program Manager's office, SCE network and in SMS.
- Special inspection eqpt. or procedures Program Manager's office and SCE network.
- Flood data, waterway adequacy, channel cross sections With design file in Project Manager's office, SCE network or in archives and in SMS.

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.

17. What is the FC bridge inspection frequency? (Metric 16)
24 months
18. Is the FC Plan completed for all FC bridges? (Metric 16) (Yes X No ___)
19. Are the FCM Identified in the FC Plan? (Metric 16) (Yes X No ___)
20. What is the underwater inspection frequency? (Metric 17)
60 months unless conditions warrant more frequently
21. Are the underwater elements identified and located? (Metric 17) (Yes X No ___)
22. List any complex bridges: (Metric 19)
SFN 7730306, N. Main St. over Cuyahoga River, Bridge # AKR-008-0908
23. Do the complex bridges require specialized inspection procedures and additional inspector training? (Metric 19) (Yes X No ___)

Describe: Inspections require access via 60-foot snoopers and adapted rock-climbing equipment and techniques. Specialized equipment includes an ultrasonic thickness gage and a dye penetrant kit. The team leader must have additional training/certification in FCM inspection.

I. RECOMMENDED PRACTICES

This area of the report should list any innovative ideas that provide valuable support and process improvement for offices across the State. For example: It creates a safer work environment, deploys resources efficiently, maximizes available resources, is measurable etc.