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: Ottawa County

Checklist completed by: James P. Moore, PE Date: 5/23/2019

I. MAINTENANCE, REHABILITATION AND REPLACEMENT PROGRAM

A. NUMBER OF BRIDGES WITH MAINTENANCE RESPONSIBILITY

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

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

B. PROCEDURES AND BUDGET

1. Contract repairs and replacement
   - List typical work items
     - *Major Maintenance, Bridge Rehabilitation, Bridge Replacement*
   - List approximate annual budget
     - *$500,000*
   - Are Fed Funds used?
     - *Yes*
   - Are Credit Bridge funds used?
     - *Yes*

2. In-house repairs and replacements
   - List typical work items
     - *Bridge Cleaning, Approach/Embankment Improvements, Side Drainage Improvements, Wearing Surface Patching/Chip Seal, Misc. Steel Repairs.*

- List approximate annual budget
  - *$10,000 Materials + Labor*
- List staffing availability
  - *Foreman + 2 to 4 man labor crew*

3. How are projects identified and selected?
   - *Force Account Maintenance – Bridge Engineer develops an annual maintenance list based upon inspection findings.*
   - *Capital Improvement – Bridge Engineer maintains a 10-year bridge capital improvement plan and selects projects requiring major maintenance, rehabilitation, or replacement based upon structure condition and importance as well as financial constraint factors.*

4. How are plans developed for emergency repairs?
   - *Bridge Engineer develops all plans and specifications for bridge related projects in-house as needed.*

5. Who does the work of emergency repairs?
   - *Bridge Engineer and Maintenance Superintendent make recommendations to the County Engineer as to whether repairs can be done by Force Account or if the work needs to be contracted out.*

6. How is repair work documented? (i.e. work record, time card)
   - *Repair work is fully documented with plans, inspection records, material documentation, payroll (or daily crew documentation if done by force account), etc. All information is placed in the permanent bridge file.*

7. Who is empowered to order emergency road closures and how is it done?
   - *County Engineer by resolution through the Ottawa County Board of Commissioners*

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)**
   - *92 Bridges*

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

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: *James P. Moore, PE – County Bridge Engineer*
- Yrs. Inspection related experience: *27 years*
- List courses attended (& approx dates)
  - *Level 1 Bridge Inspection (1992)*
  - *Level 2 Bridge Inspection (2010)*
  - *SMS Training (2013)*
  - *ODOT Bridge Inspection Refresher Training (2018)*
  - *Brr Bridge Load Rating Training (2019)*

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

(Metric 1)

- Name: *James P. Moore, PE – County Bridge Engineer*
- Yrs. Inspection related experience: *Same as Above*
- List courses attended (& approx dates)
  - *Same as Above*

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

(Metric 1&3)

- Name: *Craig Miller, EI – Deputy Engineer*
- Yrs. Inspection related experience: *7 years*
- List courses attended (& approx dates)
  - *Level 1 Bridge Inspection (2012)*
  - *Level 2 Bridge Inspection (2012)*
  - *SMS Training (2013)*
  - *ODOT Bridge Inspection Refresher Training (2018)*

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

%TIME

2% Bridge/Culvert inspection	_____ Overload/Superload
_____ Bridge Design/Plan prep	3% Surveying
_____ Bridge Construction	95% Other -
_____ Bridge Maintenance	_____100%

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

(Metric 1&3)

- Name: *Ronald P. Lajti, Jr., PE, PS – County Engineer*
- Yrs. Inspection related experience: *13 years*
- List courses attended (& approx dates)
  - *Level 1 Bridge Inspection (2005)*
  - *Level 2 Bridge Inspection (2006)*
  - *ODOT Bridge Inspection Refresher Training (2016)*

all are qualified in their positions

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

%TIME

1% Bridge/Culvert inspection	2% Surveying
1% Bridge Design/Plan prep	95% Other -
_____ Bridge Construction	_____100%
_____ Bridge Maintenance	
1% Overload/Superload	

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

(Metric 1&3)

- Name: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____

_____

_____

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

%TIME

_____ Bridge/Culvert inspection	_____ Overload/Superload
_____ Bridge Design/Plan prep	_____ Surveying
_____ Bridge Construction	_____ Other -
_____ 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: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____

_____

_____

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

%TIME

_____ Bridge/Culvert inspection
_____ Bridge Design/Plan prep
_____ Bridge Construction
_____ Bridge Maintenance
_____ Overload/Superload
_____ Surveying
_____ Other -
_____100%

7. **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: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____

_____

_____

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

%TIME

_____ Bridge/Culvert inspection
_____ Bridge Design/Plan prep
_____ Bridge Construction
_____ Bridge Maintenance
_____ Overload/Superload
_____ Surveying
_____ Other -
_____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: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____
_____
_____

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

%TIME
_____ Bridge/Culvert inspection
_____ Bridge Design/Plan prep
_____ Bridge Construction
_____ Bridge Maintenance

9. **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: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____
_____
_____

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

%TIME
_____ Bridge/Culvert inspection
_____ Bridge Design/Plan prep
_____ Bridge Construction
_____ Bridge Maintenance

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

- *James P. Moore, PE – County Bridge Engineer*

a. List Ohio PE # *61119*

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

- *N/A – Ottawa County has no bridges that require underwater inspection.*

- Name: _____
- Yrs. Inspection related experience: _____
- List courses attended (& approx dates) _____

_____

_____

C. INSPECTION EQUIPMENT

1. Type of vehicle used for inspections
   - *Standard ½ Ton 4WD Work Truck*

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

	Yes/No		
Extension Ladder	Y	First Aid Kit	Y
what length?	14'	Wire Brush	Y
6' Folding Rule	Y	Calipers	Y
100' Fiberglass Tape	Y	Shovel	Y
Geologist Hammer	Y	Screw Driver	Y
Inspection Mirror	Y	Pliers	Y
Flashlight	Y	Wrenches	Y
Thermometer	Y	Sounding Chains	N
Plumb Bob	N	Hip Boots and Waders	Y
Camera	Y	Paint Stick/Crayon	Y
2'-0" Level	Y	Scraper	Y
Brush Hook/Axe	Y	Probing Rod	Y
Boat	Y	Vertical Clearance Rod	Y

3. List types of NDT methods used (ie. dye penetrant, magnetic particle, ultrasound)
   - *Ottawa County does not use NDT methods of inspection on a regular basis. If deemed to be required, a qualified consultant will be hired to provide the testing.*

4. How is usage determined?
   - *At the discretion of the County Bridge Engineer*

5. List additional items
   - *Laser Level and Survey Rod*
   - *Spud Bar*
   - *Magnetic Coating Thickness Gauge*
   - *Micrometer*

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

7. Use of equipment **(Metric 16)**
   a. How many bridges need a snooper?
      - *None*
   b. How many bridges is it used on?
      - *N/A*
   c. How often?
      - *N/A*

D. INSPECTION PROCEDURES

1. Approximately how many inspections were made during last calendar year? **(Metric 6)**
   - *114*

2. Approximately how many inspections are scheduled for the current calendar year? **(Metric 6)**
   - *113*

3. Average number of inspections per day **(Metric 6)**
   - *2018 Inspections – 113 Bridges in 14 working days = 8.1 avg. per day*

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

   a. Beam/Girder = *0.5 hour per span*
   b. Slab = *0.5 hour per span*
   c. Truss (pony/through/deck) = *1 hour (2-3 hours FC)*
   d. Culvert = *0.5 hour*

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:
   - *Recorded on paper then transferred to the SMS.*

   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?

- *Comments recorded on paper then transferred to 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 ___)

b. Bridge office (Yes _X_ No ___)

7. Who determines the need for a routine inspection frequency greater than once Annually, and what criteria is used? **(Metric 6)**

- *The County Bridge Engineer determines the inspection frequency of all bridges. The criteria used are based upon directives of the ODOT Bridge Inspection Manual and is applied at the discretion of the County Bridge Engineer as agreed upon by the County Engineer.*

8. List bridges requiring inspection more frequently than one year intervals (DAMAGE, IN-DEPTH, SPECIAL INSPECTIONS). List frequency of inspection. **(Metric 11)**

- *No bridges in Ottawa County have an inspection interval less than 12 months.*

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

10. What kinds of quality assurance checks are made of the inspection process? **(Metric 20)**

- *Bridge inspections are performed by two inspectors. One person inspects while the other takes notes and pictures. These roles are randomly switched during the inspection process so that both inspectors are involved in the evaluations. Onsite concurrence of inspection condition ratings are discussed and compared to the condition evaluation descriptions in the ODOT Bridge Inspection Manual prior to completing the inspection report. Any critical findings are presented and discussed with the County Engineer and any other required personnel to determine course of action.*

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

- *N/A – Ottawa County does not have any bridges that require underwater inspection.*

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

- *N/A*

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

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 _X_ No ___)

    Routine Annual Inspections? (Yes _X_ No ___)

    In-Depth Inspections? (Yes _X_ No ___)

    Underwater Inspections ? (Yes ___ No ___) *N/A*

    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)
    - *112*

2. How many bridges are inspected by probing?
    - *61*

3. How many structures are Scour Critical (item 74 - 3, 2, 1 or 0)? (Metric 18)
    - *None*

4. Are Plans of Action (POA) complete and implemented for all bridges coded "Scour Critical"? (Metric 18)
    - *No Scour Critical structures in Ottawa County at this time.*

5. How many structures are coded 6 on item 74 Scour Critical? (Metric 18)
    - *None*

6. How are scour evaluations performed? (Metric 18)
    - *Scour evaluations for in-service bridges are performed onsite using basic inspection techniques (eg. visual inspection, probing, etc.). Scour analysis calculations are developed for new structures. Hydraulic modeling software with the D_{50} value from the subsurface investigation report is used to predict scour potential.*

7. Who determines the need for diving inspections and by what criteria?
    - *The County Bridge Engineer determines the need for diving inspections based upon guidance from the ODOT Bridge Inspection Manual.*

F. INVENTORY

1. What kinds of inventory quality assurance checks are performed? (Metric 22)
   - *The County Bridge Engineer uses the SMS Structure Inventory Coding Guide to establish and maintain bridge inventory data. Since SMS is currently unable to generate a complete listing of inventory error codes, we rely upon ODOT to point out required revisions to assure that inventories are accurate and properly coded. New inventories are input based upon the requirements of the most recent version of the ODOT SMS Structure Coding Guide.*

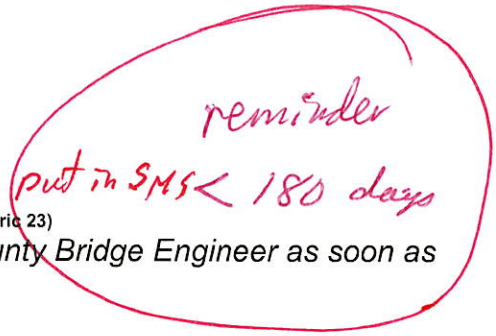
2. How often is the inventory checked for needed updates? (Metric 22)
   - *Once an inventory is established for a bridge, the County Bridge Engineer will update a bridge inventory for the following reasons:*
     - *Maintenance or Rehabilitation*
     - *New Load Rating*
     - *Directive from ODOT requiring a revision*
     - *Data updates (eg. traffic counts)*

3. How is the inventory data input into the system?
   - *Information is updated directly in SMS.*

4. When is the updated inventory data forwarded to ODOT? (Metric 23)
   - *Inventory updates are input directly into SMS by the County Bridge Engineer as soon as possible once required changes are identified.*

   Changes discovered during inspection?
   - *Directly into SMS during input of inspection information*

   Changes from new construction or rehab?
   - *Directly into SMS when construction is complete and first inspection is performed*



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)

SFN	STRUCTURE I.D.	ROAD NAME	CROSSING FEATURE
6230245	ALL-54-3.64	BILLMAN	CEDAR CREEK
6230288	ALL-68-1.17	WALBRIDGE EAST	CRANE CREEK
6230318	ALL-70-2.74	CURTICE EAST & WEST	CEDAR CREEK
6231985	BEN-19-1.99	GRAYTOWN	TOUSSAINT CREEK
6232043	BEN-21-2.23	STANGE	TOUSSAINT CREEK
6232078	BEN-21-3.85	STANGE	PACKER CREEK
6232064	BEN-21-4.80	STANGE	TURTLE CREEK
6232132	BEN-22-2.30	LICKERT-HARDER	TOUSSAINT CREEK
6232159	BEN-22-4.35	LICKERT-HARDER	PACKER CREEK
6232264	BEN-23-4.90	BENTON-CARROLL	TURTLE CREEK
6232280	BEN-24-0.07	DUFF-WASHA	TURTLE CREEK
6232302	BEN-65-0.46	HELLWIG	PACKER CREEK
6232981	CAR-90-0.03	LEMON	TURTLE CREEK
6233066	CAR-101-1.70	LEUTZ	RUSHA CREEK
6233082	CAR-102-1.60	BEHLMAN	RUSHA CREEK
6233155	CAR-237-0.50	LOCUST POINT	TURTLE CREEK
6235255	CLA-56-1.43	FULKERT	TOUSSAINT CREEK
6235468	CLA-214-1.43	OPFER-LENTZ	TOUSSAINT CREEK
6238130	HAR-6-0.72	ELMORE EASTERN	SUGAR CREEK
6238297	HAR-42-0.30	HARRIS-SALEM	NINE MILE CREEK
6238335	HAR-42-2.35	HARRIS-SALEM	WOLF CREEK
6238386	HAR-43-1.26	SLEMMER-PORTAGE	WOLF CREEK
6241301	SAL-36-0.60	MUD CREEK	LITTLE PORAGE RIVER
6241344	SAL-41-0.70	4 MILE HOUSE	NINE MILE CREEK
6241557	SAL-168-0.41	BOLSINGER	MUDDY CREEK
6241573	SAL-169-1.40	WOODRICK	LITTLE PORAGE RIVER
6241638	SAL-217-1.50	MUDDY CREEK NORTH	LITTLE PORAGE RIVER

b. Bridges requiring underwater inspections
- *No bridge in Ottawa County require underwater inspection*

b. Bridges with unique or special features (i.e., pin & hanger, draw, suspension)
- *No bridges in Ottawa County contain unique features*

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 ___ No ___) **(Metric 15)**

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

- *Typically the Ottawa County Bridge Engineer informs the Maintenance Superintendent of any substantial maintenance issues as they are discovered. Minor maintenance items are assembled in an Annual Bridge Maintenance List that is compiled during the Annual Condition Inspections. This list is forwarded to the Maintenance Superintendent and the identified maintenance needs are performed by Force Account. Typically this work is performed in the early spring as weather allows. Any weather dependent items (ie. concrete deck patching, chip sealing, etc.) are scheduled when conditions are appropriate.*

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

- *The Ottawa County Bridge Engineer works directly with the County Engineer to address any immediate needs. The Maintenance Superintendent is included in the conversation to determine if the work will be done by force account or by contract.*

  How is this emergency action documented?

  Use SMS Critical Finding Report

  - *The Ottawa County Bridge Engineer develops appropriate engineering plans, sketches, etc. to address the issue. This information (with any as-built changes) along with any and all financial or contractual documentation is placed in a permanent file under a unique project number assigned to the work.*

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

- *Both. As a matter of course, all critical findings will be included in the inspection report. When corrective action is complete, the bridge will be re-inspected. All corrective action will be recorded in the comments section of the inspection report. As noted above, any emergency work will be documented and placed in a permanent project file as well.*

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

- *Ottawa County has contracted with a local consultant who has performed signing inventories on a regular interval. As part of this service, the consultant has supplied us with a proprietary software system with integrated GIS Mapping to assure that we have proper signage and placement thereof. The County Bridge Engineer in cooperation with maintenance personnel insure that proper signage is installed based upon the consultant's recommendations or per the OMUTCD.*

H. LOAD ANALYSIS AND POSTING

1. Number of plans for existing bridges available for NBIS length bridges
   - *76 of 92 (design plans and/or standard plan sheets from ODOT)*

2. Number of plans for non-NBIS bridges (>= 10' and <= 20' long)
   - *8 of 21*

3. Number of bridges analyzed in accordance with the *AASHTO Manual for Bridge Evaluation* (Metric 13)
   - *106 of 113 (6 reinforced concrete round/elliptical culverts, 1 reinforced concrete box culvert w/ no shop plans)*

4. By Whom (Metric 13)
   - *Initial ratings were developed by a combination of qualified design consultants and the County Bridge Engineer*
   - *SHV ratings were developed in-house by the County Bridge Engineer*
   - *EV ratings will be developed in-house by the County Bridge Engineer as required*

5. When
   - *Initial load ratings were developed between 2009 and 2013.*
   - *SHV Load Ratings were developed from 2015 thru 2017.*
   - *EV Load Ratings will be performed prior to 12/31/2022.*

6. Methods used (Metric 13)
   - *BARS, Brr, ODOT spreadsheets, In-house spreadsheets.*
   - *ODOT provided BRASS analysis for 2 box culverts.*
   - *Vendor is required to provide ODOT compliant load rating when supplying premanufactured box culverts*

7. When are bridges rerated and how do load raters keep up with overlays and other changes? (Metric 13)
   - *Bridges are re-rated based upon the ODOT Inspection Manual criteria. When a summary rating element falls to a rating of 4 or less, any substantial change to a posted bridge (eg. asphalt overlay), or any critical finding associated a bridge inspection will typically require a re-rating.* Use new load rating criteria

8. Number of NBIS length bridges not load rated (Metric 13)
   - *None*

9. List the NBIS length bridges considered "not ratable" including reason for being considered "not ratable" (Metric 13)
   - *None*

10. Number of NBIS length bridges load posted (Metric 14)
   - *13*

11. How determined (engineering judgment, analysis, mix)
    - *Analysis*

12. List bridges closed due to condition rating (rough check)
    - *None*

13. List bridges rated less than 100% Ohio legal load and not physically load posted, and resolution
    - *None*

14. Number of NBIS bridges with Gusset Plates (Metric 13)
    - *26 (Steel Pony Trusses)*

15. Number of NBIS bridges with Gusset Plates analyzed. (Metric 13)
    - *26*

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

• Inspection reports, including old inspections	- *Permanent File by Inspection Year*
• Design Calculations	- *Permanent File by Project*
• Plans	- *Pipe Rack & Scans*
• Load analysis calculations	- *Permanent File by Bridge*
• Inventory forms	- *Permanent File*
• Photos and sketches	- *Permanent File Electronic*
• Repairs and maintenance history	- *Permanent File by Bridge*
• Scour evaluation	- *Permanent File by Bridge*
• Scour POA	- *Permanent File by Bridge*
• Fracture Critical File	- *Permanent File by Bridge*
• Load Posting/Closing	- *Permanent File by Bridge*
• Underwater inspections	- *N/A*
• Special inspection eqpt. or procedures	- *on FC Plans*
• Flood data, waterway adequacy, channel cross sections	- *on Plans / Photos (electronic)*

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)
    - *No underwater inspections required in Ottawa County*

21. Are the underwater elements identified and located? (Metric 17) (Yes ___ No ___) -*N/A*

22. List any complex bridges: (Metric 19)

- *None*

23. Do the complex bridges require specialized inspection procedures and additional inspector training? (Metric 19) (Yes ___ No ___)

Describe:

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.

- *Open for discussion.*