Fairfield County 2019 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Inventory Data - NBIS Bridges Only

	NBIS COUNT
NBIS Bridges > 20'	**235**
Bridges 10'-20'	**110**
	345
***Possible NBIS length errors**	19

			CODE	COUNT	%
Item 221	**Inspection Responsibility**				
	County		3	235	100.0%
Item 21	***Maintenance responsibility**				
	County		3	234	99.6%
	City or other local		4	0	0.0%
	Railroad	(CR23)	6	1	0.4%
	Private		7	0	0.0%
	Combination		8	0	0.0%
	Park District		C	0	0.0%
	Township		F	0	0.0%
				235	100.0%
Item 42A	***Type service on bridge**				
	Other		0	0	0.0%
	Highway		1	219	93.2%
	Railroad	(CR23)	2	1	0.4%
	Ped/Bikeway	CR41	3	1	0.4%
	Hwy/RR		4	0	0.0%
	Hwy/Ped		5	14	6.0%
	RR Abnd. rails rem'vd		A	0	0.0%
				235	100.0%
Item 42B	***Type service under bridge**				
	Hwy w/ or w/o Ped		1	1	0.4%
	Railroad		2	3	1.3%
	Ped/Bkwy		3	1	0.4%
	Hwy w/ RR		4	0	0.0%
	Waterway		5	228	97.0%
	Hwy/Waterway		6	1	0.4%
	RR/Waterway		7	1	0.4%
	Hwy/Wtrway/RR		8	0	0.0%
	Relief (RR w/o tracks)		9	0	0.0%
				235	100.0%

ITEMS	*Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab continuous	112	25	10.6%
	concrete beam simple	121	1	0.4%
	concrete box beam simple	131	5	2.1%
	concrete arch deck	153	1	0.4%
	concrete frame simple	171	9	3.8%
	concrete culvert filled	195	8	3.4%
	prestressed conc. beam simple	221	3	1.3%
	prestressed conc. beam continuous	222	2	0.9%
	prestressed conc. box beam simple	231	26	11.1%
	prestressed conc. box beam continuous	232	9	3.8%
	steel beam simple	321	120	51.1%
	steel beam continuous	322	9	3.8%
	steel truss deck	343	1	0.4%
	steel girder thru	364	1	0.4%
	steel culvert filled	395	2	0.9%
	timber frame other	470	1	0.4%
	steel truss (pony)	34A	12	5.1%
			235	100.0%

Item 92A	*Fracture Critical	CODE		COUNT	%
	fracture critical member	Y		13	5.5%
	fracture critical member	N		222	94.5%
				235	100.0%
	No. of steel trusses and girders	13	34x, 36x	13	

Item 113	Scour			
	Bridge not over waterway	N	5	2.1%
	unknown foundation	U	0	0.0%
	over tidal waters	T	0	0.0%
	foundations on dry land	9	13	5.5%
	stable above footing	8	196	83.4%
	countermeasures installed	7	5	2.1%
	no scour evaluation made	6	0	0.0%
	stable within footer limits	5	16	6.8%
	stable action needed	4	0	0.0%
	scour critical - unstable	3	0	0.0%
	scour critical - scour present	2	0	0.0%
	scour critical - failure imminent	1	0	0.0%
	scour critical - bridge failed	0	0	0.0%
			235	100.0%

High number of code 8

Item 92B	Underwater	CODE	COUNT	%
	requires dive inspection	N	235	100.0%
	requires dive inspection	Y	0	0.0%
	dive inspection dates		0	0.0%
			235	100.0%

Item 709	*Plan Information	CODE	COUNT	%
	no plans	0	8	3.4%
	plans available	1	219	93.2%
	field information	2	7	3.0%
	not applicable	N	1	0.4%
			235	100.0%

Item 63	*Documented Engineering Judgment			COUNT	%
	Field Eval & Doc EJ			6	2.6%
	Rating Code in Error	D and F	0 171 or 195	0	

BR_100 for these bridges?

Item 580	*Deep Culverts	(depth of fill)	COUNT	%
	Culvert	fill>6.5'	1	0.4%

Items	195 Culvert vs 171 Frame	(Items 43A, 43B, 43C)	COUNT	%
	# that do NOT meet the 2' Rule		0	0.0%

Item 63	*Method of Analysis	CODE	COUNT	%
	Field Eval & Doc. Eng Judgment	0	6	2.6%
	Load testing	4	0	0.0%
	No Rating done	5	2	0.9%
	Load Factor (LF)	6	82	34.9%
	WS or AS	7	115	48.9%
	Load & Resistance Factor	8	30	12.8%
	Assigned Rating (LFR) HS20	D	0	0.0%
	Assigned Rating (LRFR) HL93	F	0	0.0%
	Not applicable (Ped, RR, Bldg)	X	0	0.0%
			235	100.0%

REMINDER:

Load Factor required for bridges built after 1993 (with certain exceptions)

LRFR required for bridges built after 2010

Inspection Condition Data - NBIS Bridges Only

Item 41	*Operating Status	CODE	COUNT	%
	Open, No restriction	A	227	96.6%
	Open, posting recommended	B	0	0.0%
	Open, Half width construction	C	0	0.0%
	Open because of temporary fix	D	0	0.0%
	Open using temporary structure	E	0	0.0%
	New struture not yet open	G	0	0.0%
	closed for load capacity reason	K	0	0.0%
	Posted for load capacity	P	8	3.4%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			235	100.0%

	General Appraisal		CODE		COUNT	%
GOOD	50.2%	Excellent	9		23	9.8%
		Very good	8		42	17.9%
		Good	7		53	22.6%
FAIR	46.0%	Satisfactory	6		80	34.0%
		Fair	5		28	11.9%
POOR	3.8%	Poor	4		7	3.0%
		Serious	3		2	0.9%
		Critical	2	K	0	0.0%
		Imminent Failure	1	K	0	0.0%
		Closed	0	K	0	0.0%
					235	100.0%

FHWA Performance Measures

Performance	% Deck Area			Lowest of GA or Deck	COUNT	Deck s.f
GOOD	61.1%	8.2%	9	Excellent	18	35,016
		26.3%	8	Very good	38	112,754
		26.6%	7	Good	55	113,850
FAIR	35.4%	27.3%	6	Satisfactory	83	116,915
		8.1%	5	Fair	32	34,479
POOR	3.6%	2.6%	4	Poor	7	11,291
		0.9%	3	Serious	2	3,952
		0.0%	2	Critical	0	0
		0.0%	1	Imminent Failure	0	0
		0.0%	0	Closed	0	0
	100.0%	100.0%			235	428,257

Items	AGE of BRIDGES	(Items 27, 106)	YEAR (built or rehab)	COUNT	
			-1900	0	0.0%
			1901-1910	0	0.0%
			1911-1920	0	0.0%
			1921-1930	1	0.4%
			1931-1940	1	0.4%
			1941-1950	0	0.0%
			1951-1960	6	2.6%
			1961-1970	14	6.0%
			1971-1980	21	8.9%
			1981-1990	75	31.9%
			1991-2000	65	27.7%
			2001-2010	37	15.7%
			2011-2020	15	6.4%
				235	100.0%

Load Rating Errors	COUNT
Inv RF too low or Op RF too high	2
Below 100% Legal but not Posted	1
Percent Legal (Item 734) needs to correlate to Lowest RF	1
Bridge Posting (Item 70) needs to match % Legal	1
Missing Item (vehicle, GVW, RF) in Ohio Legal Loads	1
Percent Legal Should not be > 150%	3
Legal Load RF should not be equal to each other except when Method of Rating = 0,4,5 or metal culverts	1
EV 2 and EV3 Rating Factor errors	7

Load Ratings Due	COUNT
SHV due end 2020 DONE	14
SHV Load Ratings Due end 2020	60
EV Load Ratings DONE	5
EV Load Ratings Due end 2022 ON HOLD	75
EV Load Ratings needed because of date	0

(C)	Compliant
(SC)	Substantially Compliant
(CC)	Conditionally Compliant (Adhering to approved pan of corrective action)
(NC)	Not Compliant

METRIC 6 Insp. Frequency Routine

Bridge Inspections Overdue		ACTUAL COUNT	% COMPLIANT	COMPLIANCE
NBIS -	24 months	0	100.0%	(C)
ORC -	Calendar Year	0	100.0%	(C)
BIM -	18 months	0	100.0%	(C)

METRIC 8 - Insp. Frequency Underwater

Dive Inspections Overdue	ACTUAL COUNT	% COMPLIANT	COMPLIANCE
60 months	0	N/A	(C)

METRIC 10 - Insp. Frequency FC Member

FC Inspections Overdue	ACTUAL COUNT	% COMPLIANT	COMPLIANCE
24 months	0	100.0%	(C)

METRIC 13 - Load Rating

Type of Metric check	Need for compliance	# Not Rated	% of NBIS Rated	COMPLIANCE
Deck, Super, Sub, Culvert Summary <=4	100%	0	100.0%	(C)
Operating Status = D or E	100%	0	100.0%	(C)
FC=Y	100%	0	100.0%	(C)
Operating Status = P or R	100%	0	100.0%	(C)
Bridges with no restrictions	100%	0	100.0%	(C)

***METRIC 14 - Post or Restrict**

Bridge posting/closing Follow-through	COUNT	% COMPLIANT	COMPLIANCE
Bridges below 10% legal but not closed	0	100.0%	(C)
Operating Rating Factor = 0 but not closed	0	100.0%	(C)
Bridges < 100% legal but not posted (OpStatus =A or R)	1	99.6%	(C)
Bridges to be posted but aren't (Op Status code B)	0	100.0%	(C)

METRIC 22 - Inventory (partial review)

Structure Length	ACTUAL COUNT	COMPLIANCE
Number of bridges with length or span difference	0	depends on sample size
***Culvert Span**		
unusually long steel culvert spans	0	depends on sample size
***Location**		
Item 9 Location	0	depends on sample size
missing coordinates	0	depends on sample size

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

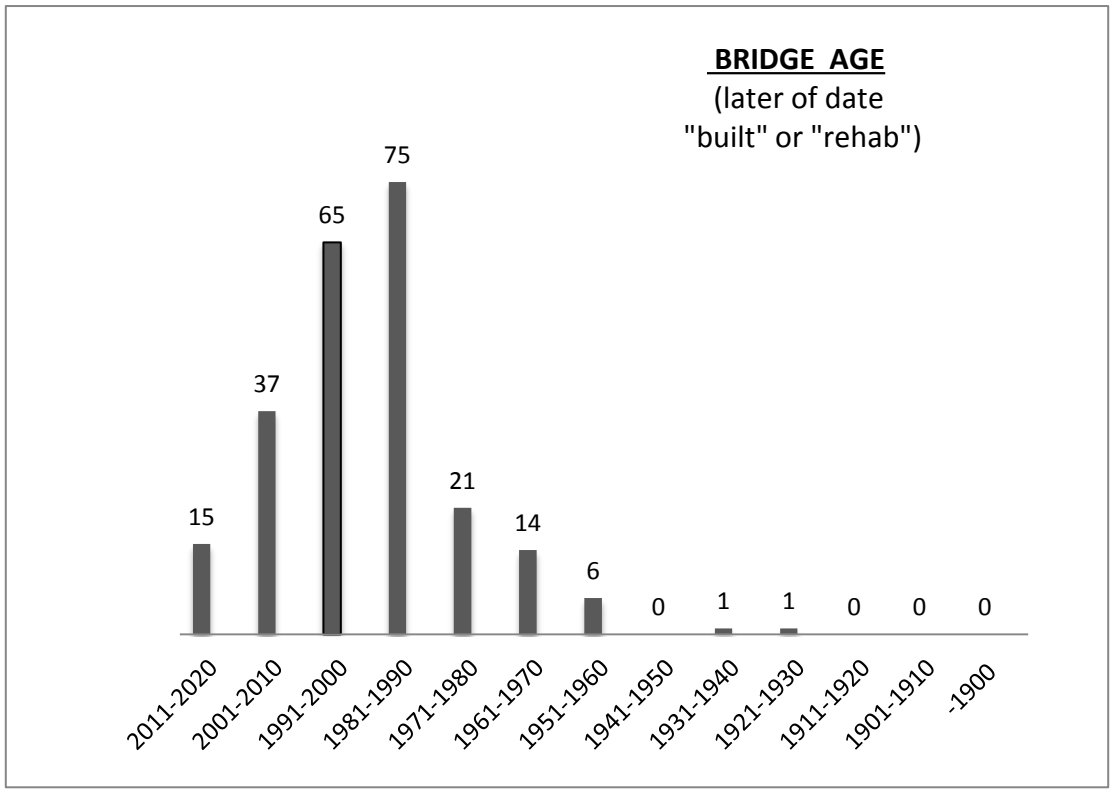
Metric	Description	(C)	(SC)	(CC)	(NC)
1	State Bridge Inspection Organization				
2	Program Manager Qualification				
3	Team Leader Qualification				
4	Load Rating Engineer Qualification				
5	UW Bridge Inspection Diver Qualification				
6	Routine Inspection Frequency - Low Risk				
7	Routine Inspection 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				

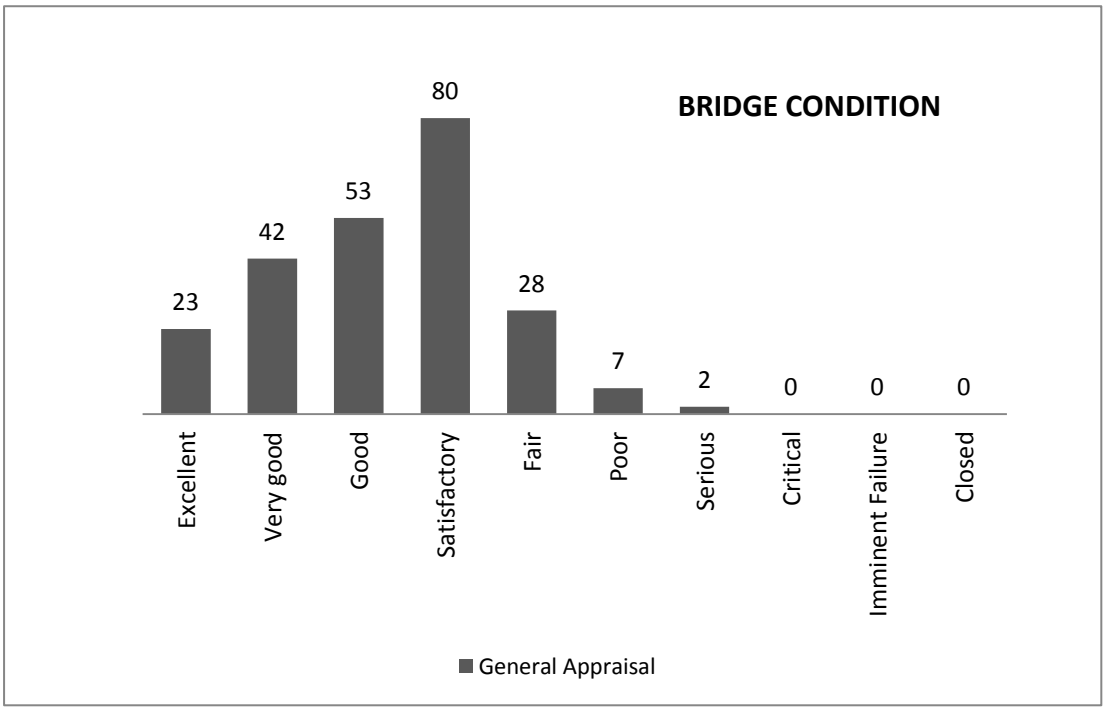
** based on results of Field Review

Metric	Action Needed
12	add detailed comments when GA<=5, check strand discount on prestressed boxes
13	various load rating items need reviewed and checked, including EV ratings

AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other





GENERAL APPRAISAL COMPARISON