

Jefferson County 2019 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Inventory Data - NBIS Bridges Only

NBIS Bridges > 20'	121
Bridges 10'-20'	88
	209

*Possible NBIS length errors 10

Item 221	Inspection Responsibility	CODE	COUNT	%
	County	3	121	100.0%
Item 21	Maintenance responsibility			
	County	3	121	100.0%
	City or other local	4	0	0.0%
	Railroad	6	0	0.0%
	Private	7	0	0.0%
	Combination	8	0	0.0%
	Park District	C	0	0.0%
	Township	F	0	0.0%
			121	100.0%
Item 42A	Type service on bridge			
	Other	0	0	0.0%
	Highway	1	119	98.3%
	Railroad	2	2	1.7%
	Ped/Bikeway	3	0	0.0%
	Hwy/RR	4	0	0.0%
	Hwy/Ped	5	0	0.0%
	RR Abnd. rails rem'vd	A	0	0.0%
			121	100.0%
Item 42B	Type service under bridge			
	Hwy w/ or w/o Ped	1	0	0.0%
	Railroad	2	3	2.5%
	Ped/Bkwy	3	0	0.0%
	Hwy w/ RR	4	0	0.0%
	Waterway	5	115	95.0%
	Hwy/Waterway	6	2	1.7%
	RR/Waterway	7	1	0.8%
	Hwy/Wtrway/RR	8	0	0.0%
	Relief (RR w/o tracks)	9	0	0.0%
			121	100.0%

ITEMS	Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab simple	111	9	7.4%
	concrete slab continuous	112	1	0.8%
	concrete beam simple	121	3	2.5%
	concrete beam continuous	122	1	0.8%
	concrete box beam simple	131	3	2.5%
	concrete arch deck	153	12	9.9%
	concrete arch thru	154	1	0.8%
	concrete girder thru	164	1	0.8%
	concrete frame simple	171	15	12.4%
	concrete culvert filled	195	2	1.7%
	prestressed conc. beam simple	221	2	1.7%
	prestressed conc. box beam simple	231	12	9.9%
	prestressed conc. box beam continuous	232	1	0.8%
	steel beam simple	321	33	27.3%
	steel beam continuous	322	5	4.1%
	steel truss thru	344	5	4.1%
	steel girder other	360	1	0.8%
	steel culvert filled	395	1	0.8%
	timber truss thru	444	1	0.8%
	stone arch deck	553	2	1.7%
	aluminum culvert filled	695	1	0.8%
	steel truss (pony)	34A	9	7.4%
			<u>121</u>	<u>100.0%</u>

Item 92A	*Fracture Critical	CODE	COUNT	%
	fracture critical member	Y	14	11.6%
	fracture critical member	N	88	72.7%
			<u>102</u>	<u>84.3%</u>
	No. of steel trusses and girders	14 34x, 36x	14	

1 closed 19 Blank, should be N

Item 113	Scour	CODE	COUNT	%
	Bridge not over waterway	N	3	2.5%
	unknown foundation	U	0	0.0%
	over tidal waters	T	0	0.0%
	foundations on dry land	9	2	1.7%
	stable above footing	8	31	25.6%
	countermeasures installed	7	59	48.8%
	no scour evaluation made	6	0	0.0%
	stable within footer limits	5	26	21.5%
	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%
			<u>121</u>	<u>100.0%</u>

Scour Photos Done?

Item 92B *Underwater	CODE	COUNT	%
requires dive inspection	N	102	84.3%
requires dive inspection	Y	0	0.0%
dive inspection dates		0	0.0%
		102	84.3%

19 Blank

Item 709 *Plan Information	CODE	COUNT	%
no plans	0	34	28.1%
plans available	1	26	21.5%
field information	2	49	40.5%
not applicable	N	2	1.7%
		111	91.7%

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Item 63 *Documented Engineering Judgment	CODE	COUNT	%
Field Eval & Doc EJ		34	28.1%
Rating Code in Error	D and F	171 or 195	0

BR_100 for these bridges?

Item 580 Deep Culverts (depth of fill)	COUNT	%
Culvert fill>6.5'	0	0.0%

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	34	28.1%
Load testing	4	0	0.0%
No Rating done	5 RR	2	1.7%
Load Factor (LF)	6	35	28.9%
WS or AS	7	26	21.5%
Load & Resistance Factor	8	19	15.7%
Assigned Rating (LFR) HS20	D	0	0.0%
Assigned Rating (LRFR) HL93	F	5	4.1%
Not applicable (Ped, RR, Bldg)	X	0	0.0%
		121	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	104	86.0%
	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	1	0.8%
	Posted for load capacity	P	16	13.2%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			121	100.0%

General Appraisal		CODE	COUNT	%		
GOOD	37.2%	9 Excellent	9	22	18.2%	
		8 Very good	8	10	8.3%	
		7 Good	7	13	10.7%	
FAIR	51.2%	6 Satisfactory	6	42	34.7%	
		5 Fair	5	20	16.5%	
POOR	11.6%	4 Poor	4	13	10.7%	
		3 Serious	3	0	0.0%	
		2 Critical	2	K	0	0.0%
		1 Imminent Failure	1	K	0	0.0%
		0 Closed	0	K	1	0.8%
			121	100.0%		

FHWA Performance Measures

Performance	% Deck Area		Lowest of GA or Deck	COUNT	Deck s.f
GOOD	45.8%	24.8%	9 Excellent	22	51,098
		9.1%	8 Very good	8	18,740
		11.8%	7 Good	14	24,310
FAIR	43.1%	31.7%	6 Satisfactory	40	65,295
		11.3%	5 Fair	20	23,346
POOR	11.1%	10.0%	4 Poor	16	20,622
		0.0%	3 Serious	0	0
		0.0%	2 Critical	0	0
		0.0%	1 Imminent Failure	0	0
		1.1%	0 Closed	1	2,293
		100.0%	100.0%	121	205,705

Items	AGE of BRIDGES	(Items 27, 106)	YEAR (built or rehab)	COUNT	
	ORIGINAL DATE		Latest of ORIG or REHAB date		
	-1900	16	-1900	3	2.5%
	1901-1910	5	1901-1910	0	0.0%
	1911-1920	10	1911-1920	10	8.3%
	1921-1930	16	1921-1930	8	6.6%
	1931-1940	7	1931-1940	6	5.0%
	1941-1950	18	1941-1950	10	8.3%
	1951-1960	5	1951-1960	4	3.3%
	1961-1970	8	1961-1970	3	2.5%
	1971-1980	2	1971-1980	5	4.1%
	1981-1990	2	1981-1990	8	6.6%
	1991-2000	4	1991-2000	20	16.5%
	2001-2010	7	2001-2010	22	18.2%
	2011-2020	21	2011-2020	22	18.2%
		121		121	100.0%

Load Rating Errors	COUNT
Percent Legal (Item 734) needs to correlate to lowest RF	2
Inv RF too low or Op RF too high	1
Legal load Vehicle Type not correct	3
GVW is incorrect	3
Legal Load RF should not be equal to each other except when Method of	4
Missing Items	2
Operating Rating Factor Low	1

Load Ratings Due	COUNT
SHV due end 2020 DONE	17
SHV load ratings Due end 2020	44
EV Load Ratings DONE	2
EV Load Ratings Due end 2022 - ON HOLD	33
EV Load Rating needed because of date	0

(C)	Compliant
(SC)	Substantially Compliant
(CC)	Conditionally Compliant (Adhering to approved plan 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	1	99.2%	(SC)

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	% COMPLIA NT	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)	0	100.0%	(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 **	96%			
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 **	87%			
23	Updating of Data				

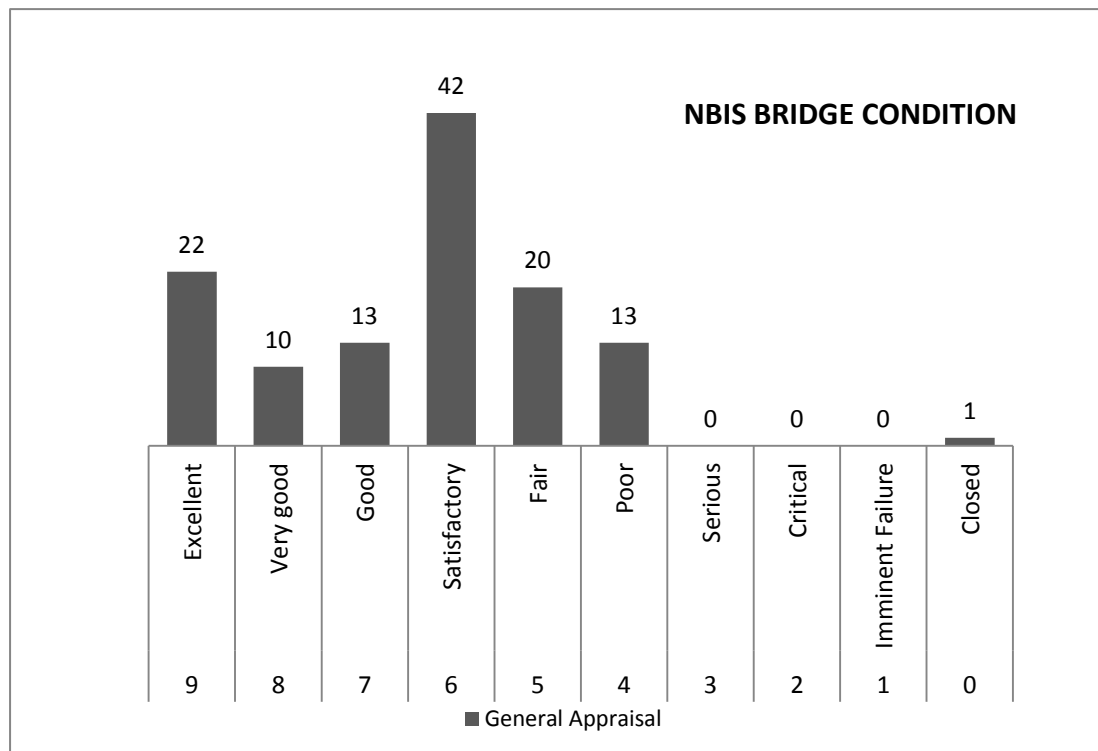
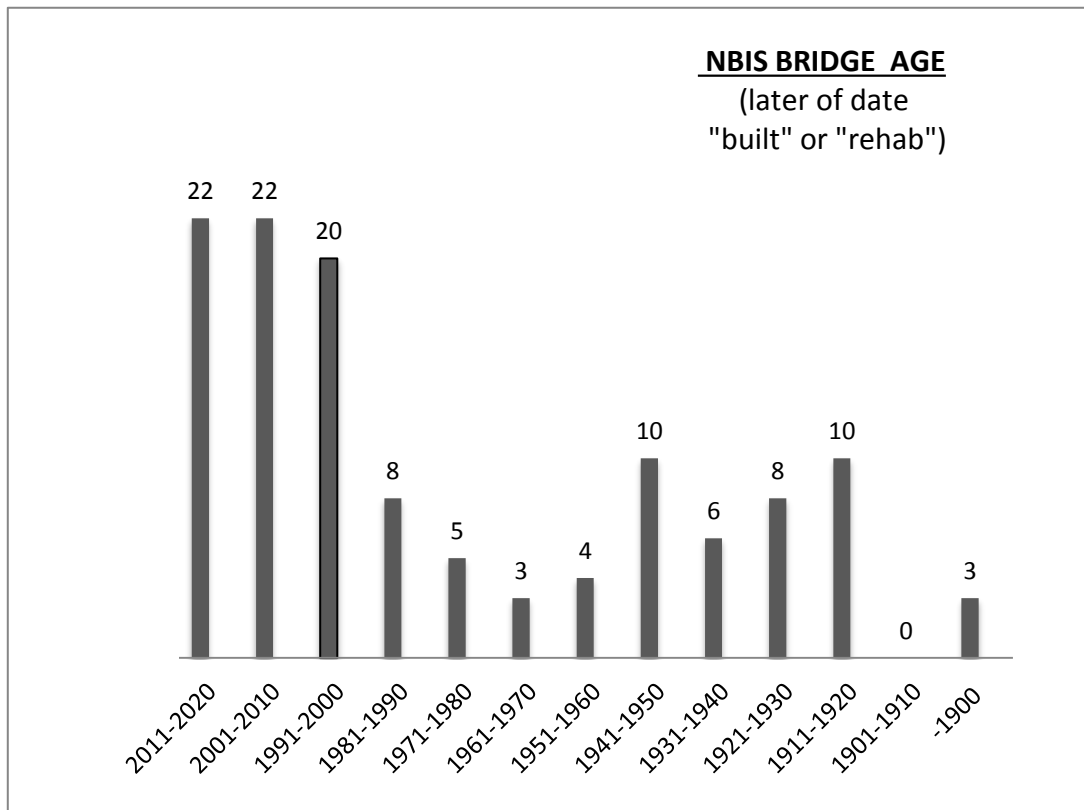
** based on results of Field Review

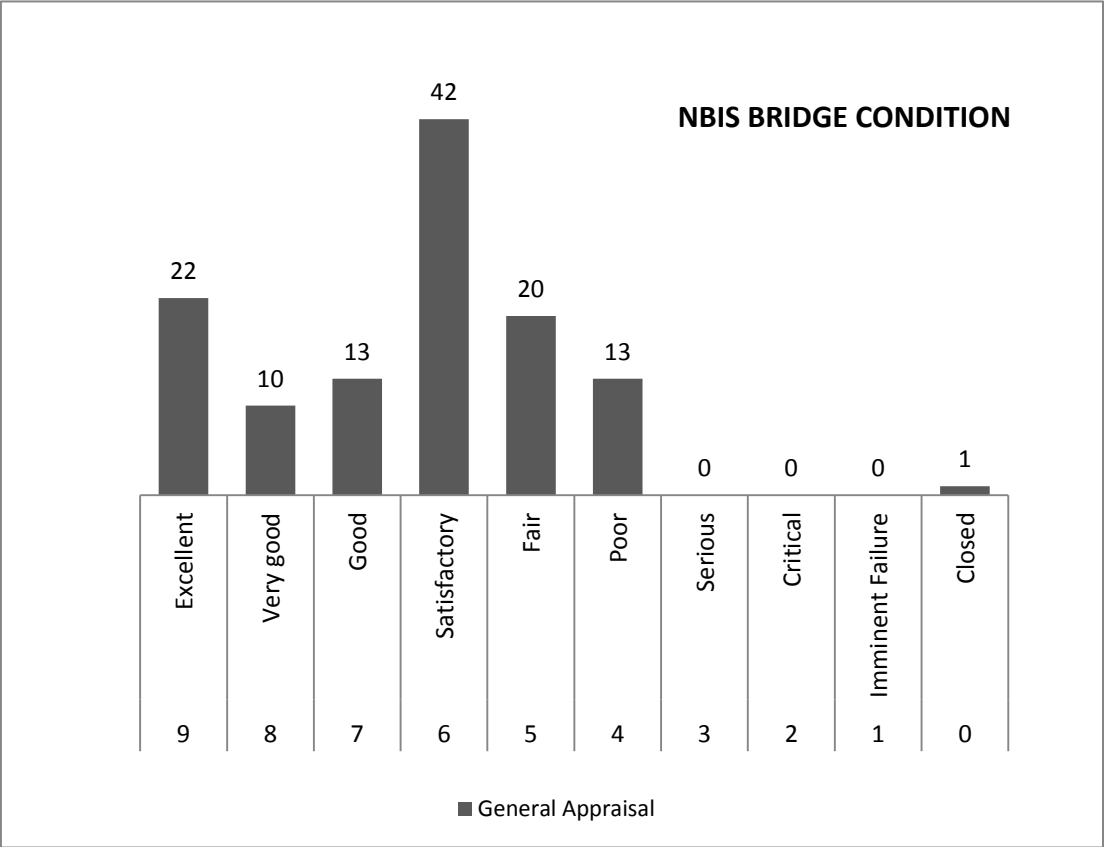
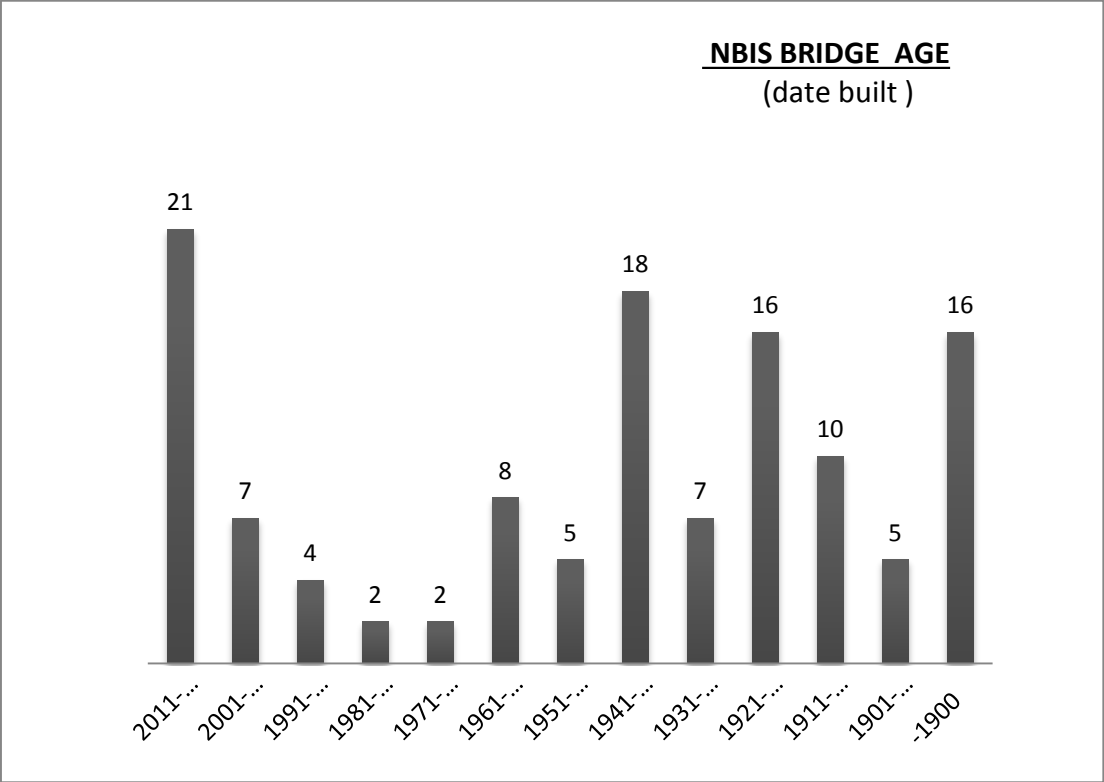
Metric Action Needed

16	FC Inspection Procedure and FP details need to added to the file
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AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other





GENERAL APPRAISAL COMPARISON

