Athens County 2019 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Inventory Data - NBIS Bridges Only

	NBIS COUNT
NBIS Bridges > 20'	**155**
Bridges 10'-20'	**180**
	335

***Possible NBIS length errors** 1

Item 221	Inspection Responsibility	CODE	COUNT	%
	County	3	155	100.0%
Item 21	**Maintenance responsibility**			
	County	3	155	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%
			155	100.0%
Item 42A	**Type service on bridge**			
	Other	0	0	0.0%
	Highway	1	155	100.0%
	Railroad	2	0	0.0%
	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%
			155	100.0%
Item 42B	***Type service under bridge**			
	Hwy w/ or w/o Ped	1	0	0.0%
	Railroad	2	0	0.0%
	Ped/Bkwy	3	1	0.6%
	Hwy w/ RR	4	0	0.0%
	Waterway	5	154	99.4%
	Hwy/Waterway	6	0	0.0%
	RR/Waterway	7	0	0.0%
	Hwy/Wtrway/RR	8	0	0.0%
	Relief (RR w/o tracks)	9	0	0.0%
			155	100.0%

ITEMS	Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab simple	111	21	13.5%
	concrete slab continuous	112	7	4.5%
	concrete beam simple	121	3	1.9%
	concrete frame simple	171	4	2.6%
	concrete culvert filled	195	5	3.2%
	prestressed conc. slab simple	211	1	0.6%
	prestressed conc. beam simple	221	4	2.6%
	prestressed conc. beam continuous	222	1	0.6%
	prestressed conc. box beam simple	231	62	40.0%
	prestressed conc. box beam continuous	232	2	1.3%
	steel beam simple	321	32	20.6%
	steel beam continuous	322	3	1.9%
	steel girder thru	364	1	0.6%
	steel culvert filled	395	3	1.9%
	timber truss thru	444	3	1.9%
	steel truss (pony)	34A	3	1.9%
			155	100.0%

Item 92A	*Fracture Critical	CODE		COUNT	%
	fracture critical member	Y		4	2.6%
	fracture critical member	N		150	96.8%
				154	99.4%
	No. of steel trusses and girders	4	34x, 36x	4	
			1 blank, should be N		

Item 113	Scour			
	Bridge not over waterway	N	1	0.6%
	unknown foundation	U	0	0.0%
	over tidal waters	T	0	0.0%
	foundations on dry land	9	1	0.6%
	stable above footing	8	41	26.5%
	countermeasures installed	7	0	0.0%
	no scour evaluation made	6	0	0.0%
	stable within footer limits	5	64	41.3%
	stable action needed	4	48	31.0%
	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%
			155	100.0%

Item 92B	Underwater	CODE	COUNT	%
	requires dive inspection	N	154	99.4%
	requires dive inspection	Y	0	0.0%
	dive inspection dates		0	0.0%
			154	99.4%
			1 blank	

Item 709	*Plan Information	CODE	COUNT	%
	no plans	0	55	35.5%
	plans available	1	66	42.6%
	field information	2	34	21.9%
	not applicable	N	0	0.0%
			155	100.0%

Item 63	*Documented Engineering Judgment			COUNT	%
	Field Eval & Doc EJ			37	23.9%
	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'	0	0.0%

Items	*195 Culvert vs 171 Frame	(Items 43A, 43B, 43C)	COUNT	%
	# that do NOT meet the 2' Rule		4	2.6%

Item 63	*Method of Analysis	CODE	COUNT	%
	Field Eval & Doc. Eng Judgment	0	37	23.9%
	Load testing	4	0	0.0%
	No Rating done	5	0	0.0%
	Load Factor (LF)	6	86	55.5%
	WS or AS	7	17	11.0%
	Load & Resistance Factor	8	15	9.7%
	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%
			155	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	117	75.5%
	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	0.6%
	Posted for load capacity	P	37	23.9%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			155	100.0%

	*General Appraisal		CODE		COUNT	%
		9 Excellent	9		19	12.3%
GOOD	39.4%	8 Very good	8		20	12.9%
		7 Good	7		22	14.2%
FAIR	45.8%	6 Satisfactory	6		48	31.0%
		5 Fair	5		23	14.8%
		4 Poor	4		17	11.0%
POOR	14.8%	3 Serious	3		6	3.9%
		2 Critical	2	K	0	0.0%
		1 Imminent Failure	1	K	0	0.0%
		0 Closed	0	K	0	0.0%
					155	100.0%

FHWA Performance Measures

Performance		% Deck Area			Lowest of GA or Deck	COUNT	Deck s.f
			15.1%	9	Excellent	19	27,318
GOOD		49.0%	22.0%	8	Very good	19	39,869
			11.9%	7	Good	22	21,506
FAIR		43.0%	27.9%	6	Satisfactory	47	50,498
			15.1%	5	Fair	25	27,373
			5.5%	4	Poor	16	9,969
POOR		8.0%	2.5%	3	Serious	7	4,586
			0.0%	2	Critical	0	0
			0.0%	1	Imminent Failure	0	0
			0.0%	0	Closed	0	0
		100.0%	100.0%			155	181,119

Items	AGE of BRIDGES	(Items 27, 106)	YEAR (built or rehab)	COUNT	
	ORIGINAL DATE		**Latest of ORIG or REHAB date**		
	-1900	7	-1900	2	1.3%
	1901-1910	0	1901-1910	0	0.0%
	1911-1920	3	1911-1920	1	0.6%
	1921-1930	7	1921-1930	3	1.9%
	1931-1940	19	1931-1940	15	9.7%
	1941-1950	13	1941-1950	11	7.1%
	1951-1960	13	1951-1960	12	7.7%
	1961-1970	19	1961-1970	15	9.7%
	1971-1980	14	1971-1980	17	11.0%
	1981-1990	4	1981-1990	14	9.0%
	1991-2000	32	1991-2000	36	23.2%
	2001-2010	9	2001-2010	11	7.1%
	2011-2020	15	2011-2020	18	11.6%
		155		155	100.0%

Load Rating Errors	COUNT
Inv RF too low or Op RF too high	1
GVW is incorrect	1
Legal Load RF should not be equal to each other except when Method of Rating = 0,4,5 or metal culverts	1

Load Ratings Due	COUNT
SHV due end 2020 DONE	37
SHV load ratings Due end 2020	26
EV Load Ratings DONE	0
EV Load Ratings Due end 2022 - ON HOLD	31
EV Load Rating needed because of date	3

(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)	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

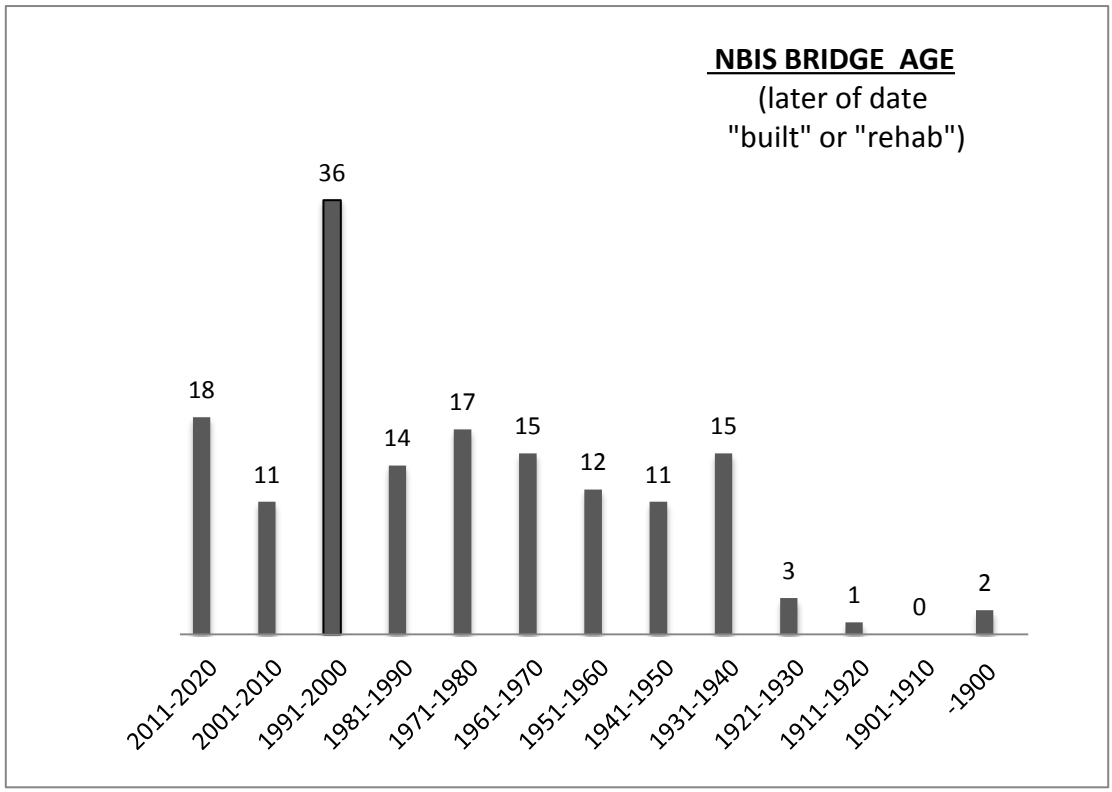
Metric	Description	(C)	(SC)	(CC)	(NC)
1	State Bridge Inspection Organization				
2	Program Manager Qualification				
3	Team Leader Qualification				
4	Load Rating Engineer Qualification				
5	UW Bridge Inspection Diver Qualification				
6	Routine Inspection Frequency - Low Risk				
7	Routine Inspection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

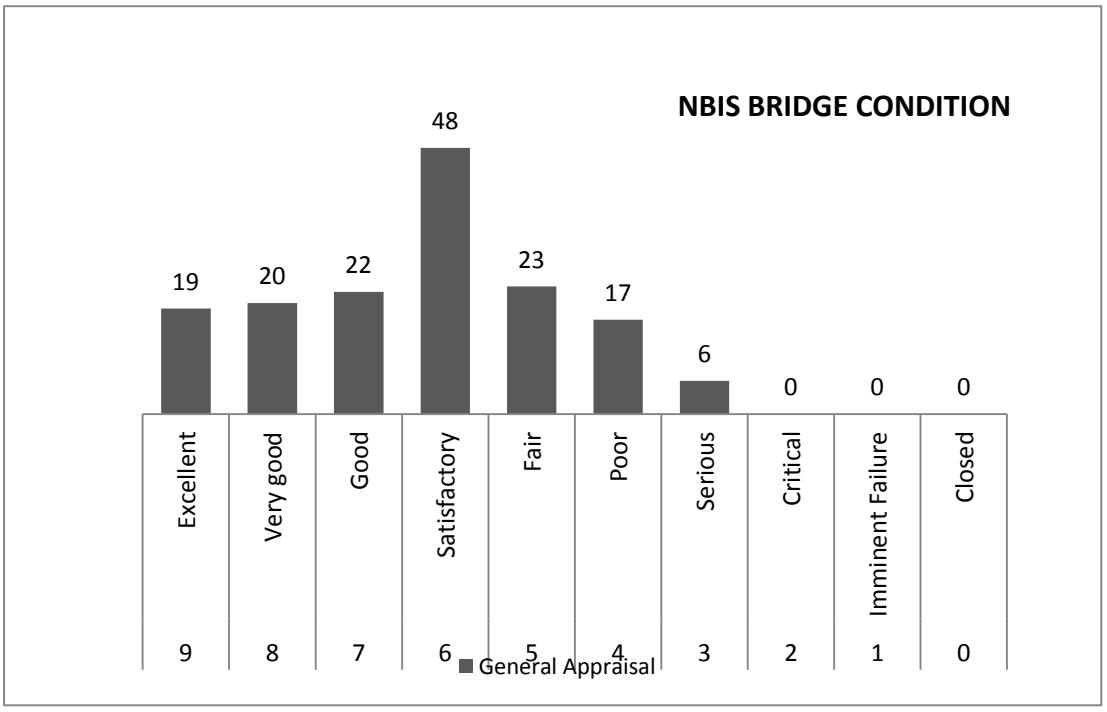
** based on results of Field Review

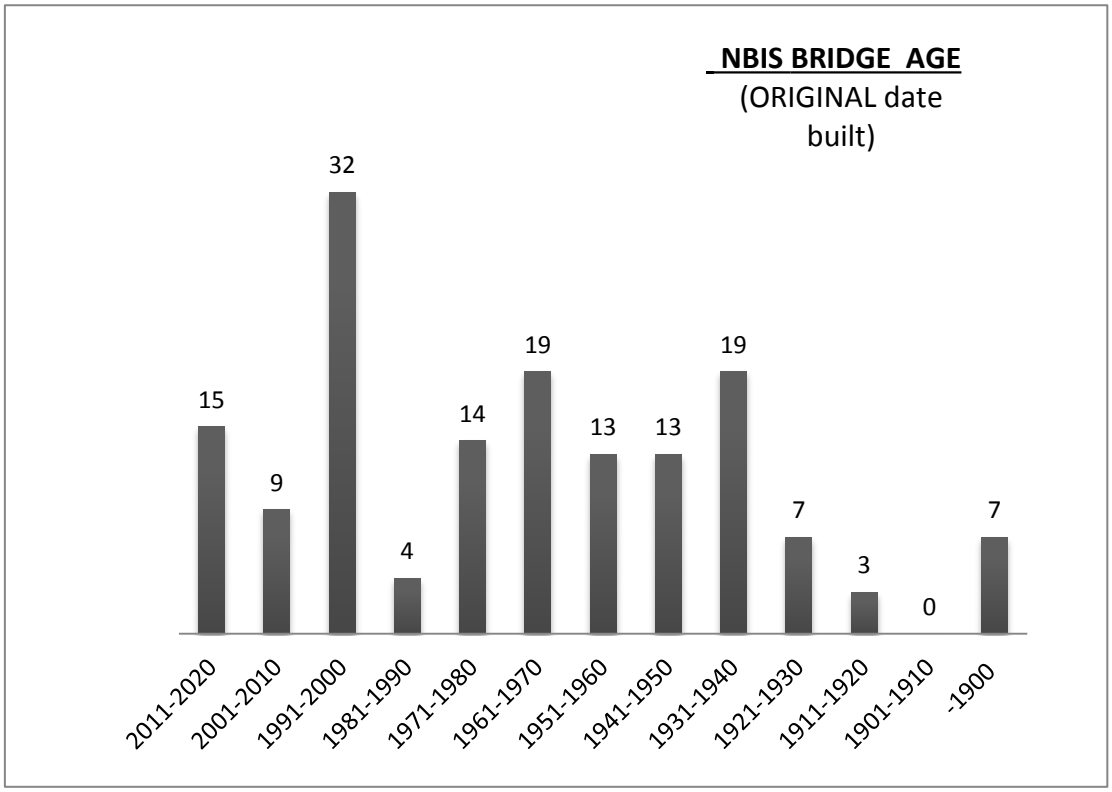
Metric	Action Needed
12	Improve comments with quantities and measurements
22	Check inventory items for accuracy, suggest to use BM-191 form in field

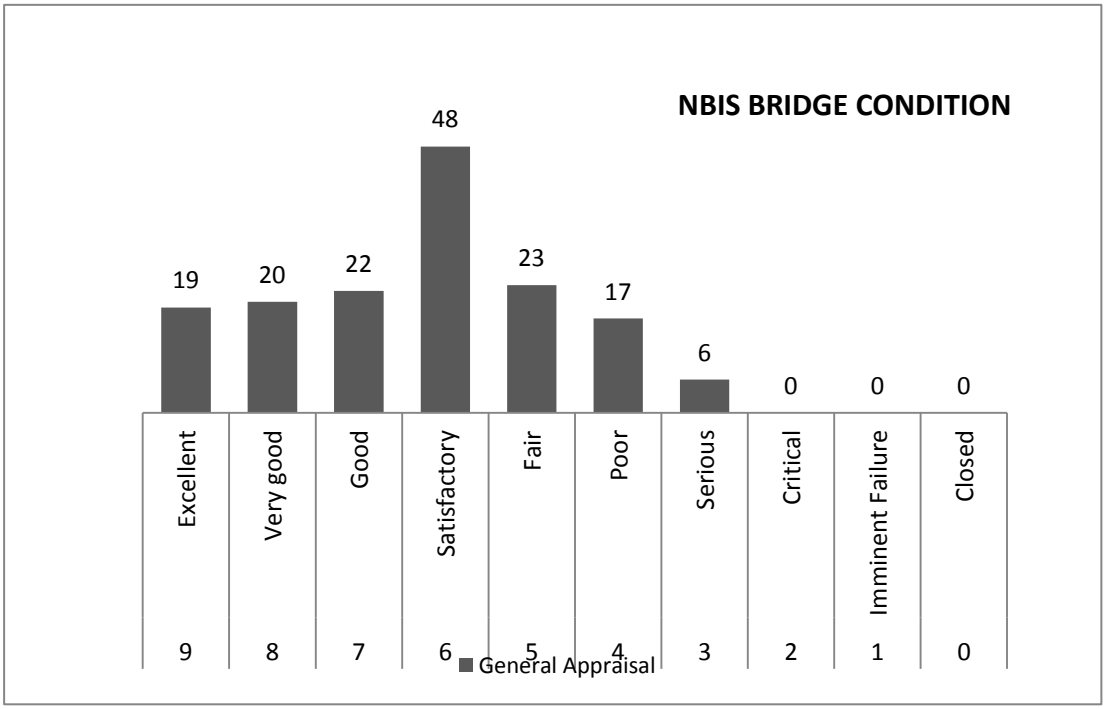
AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other






NBIS BRIDGE AGE
(ORIGINAL date built)
15
9
32
4
14
19
13
13
19
7
3
0
7
2011-2020
2001-2010
1991-2000
1981-1990
1971-1980
1961-1970
1951-1960
1941-1950
1931-1940
1921-1930
1911-1920
1901-1910
-1900


NBIS BRIDGE CONDITION
19
20
22
48
23
17
6
0
0
0
Excellent
Very good
Good
Satisfactory
Fair
Poor
Serious
Critical
Imminent Failure
Closed
9
8
7
6
5
4
3
2
1
0
General Appraisal

GENERAL APPRAISAL COMPARISON