

2018 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Union County

Inventory Data - BR 87 NBIS Bridges Only

	<u>NBIS COUNT</u>
NBIS Bridges > 20'	128
Bridges 10'-20'	<u>192</u>
	320

*Possible NBIS length errors 4

Item	Inspection Responsibility	CODE	COUNT	%
Item 221	County	3	128	100.0%
Item 21 Maintenance responsibility				
	County	3	128	100.0%
	City or other local	4	0	0.0%
	ODNR	A	0	0.0%
	Park District	C	0	0.0%
	Township	F	0	0.0%
			128	100.0%
Item 42A Type service on bridge				
	Other	0	0	0.0%
	Highway	1	127	99.2%
	Railroad	2	0	0.0%
	Ped/Bikeway	3	1	0.8%
	Hwy/RR	4	0	0.0%
	Hwy/Ped	5	0	0.0%
	RR Abnd. rails rem'vd	A	0	0.0%
			128	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	0	0.0%
	Hwy w/ RR	4	0	0.0%
	Waterway	5	126	98.4%
	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%
	Other	0	2	1.6%
			128	98.4%

ITEMS	Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab simple	111	1	0.8%
	concrete slab continuous	112	17	13.3%
	concrete culvert filled	195	7	5.5%
	prestressed conc. beam simple	221	1	0.8%
	prestressed conc. box beam simple	231	72	56.3%
	prestressed conc. box beam continuous	232	5	3.9%
	steel beam continuous	322	6	4.7%
	steel truss thru	344	6	4.7%
	steel culvert filled	395	4	3.1%
	timber truss thru	444	4	3.1%
	timber arch thru	454	1	0.8%
	timber girder thru	464	2	1.6%
	steel truss pony	34A	2	1.6%
			128	100.0%

Item 92A Fracture Critical	CODE	COUNT	%
fracture critical member	Y	8	6.3%
fracture critical member	N	120	93.8%
		128	100.0%
No. of steel trusses and girders	34x, 36x	8	

Item 92B Underwater	CODE	COUNT	%
requires dive inspection	N	128	100.0%
requires dive inspection	Y	0	0.0%
		128	100.0%

Item 113 Scour	CODE	COUNT	%
Bridge not over waterway	N	2	1.6%
unknown foundation	U	0	0.0%
over tidal waters	T	0	0.0%
foundations on dry land	9	10	7.8%
stable above footing	8	115	89.8%
countermeasures installed	7	0	0.0%
no scour evaluation made	6	0	0.0%
stable within footer limits	5	1	0.8%
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%
		128	100.0%

Scour Photos on Schedule?

Item 709	Plan Information	CODE	COUNT	%
	no plans	0	1	0.8%
	plans available	1	108	84.4%
	field information	2	18	14.1%
	not applicable	N	1	0.8%
			128	100.0%

Item 63	Documented Engineering Judgment	COUNT	%
	Field Eval & Doc EJ*	0	0.0%
	Rating Code in Error D and F	0	0 171 or 195

ITEMS	Rating Factor (Items 64, 66)	COUNT	%
	Inventory RF >= Operating RF	0	0.0%
	* Inventory Rating Factor < 40% Operating RF (Too Low)	0	0.0%
	Operating Rating Factor < 40% Ohio % Legal (Too Low)	0	0.0%
	Op RF < 0.61 not Posted	0	0.0%
	Op RF in tons for Eng Judgment	0	0.0%

Item 63	Method of Analysis	CODE	COUNT	%
	Field Eval & Doc. Eng Judgment	0	0	0.0%
	Load testing	4	0	0.0%
	No Rating done	5	1	0.8%
	Load Factor (LF)	6	97	75.8%
	WS or AS	7	3	2.3%
	Load & Resistance Factor	8	27	21.1%
	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%
			128	100.0%
	3 Non-NBIS	D		

REMINDER:
Load Factor required for bridges built after 1993 (with certain exceptions)
LRFR required for bridges built after 2010

Item 63	Method Of Rating = 5	COUNT	%
		1	0.8%

BIKE TRAIL

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	1	0.8%

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	0	0.0%
			1931-1940	0	0.0%
			1941-1950	0	0.0%
			1951-1960	0	0.0%
			1961-1970	7	5.5%
			1971-1980	21	16.4%
			1981-1990	16	12.5%
			1991-2000	34	26.6%
			2001-2010	24	18.8%
			2011-2020	26	20.3%
				128	100.0%

Items	Load Rating Errors	COUNT	%
41	Posted but % Legal >= 100	1	0.8%
	Load Rating Data error	3	2.3%
	Legal Load GVW error	1	0.8%
	Legal Loads NRL use	2	1.6%

Items	Load Ratings DUE	COUNT	%
	End of 2020	7	5.5%

Inspection Condition Data - BR 86 NBIS Bridges Only

Item 41	Operating Status	CODE	COUNT	%
	Open, No restriction	A	121	94.5%
	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	0	0.0%
	Posted for load capacity*	P	7	5.5%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			128	100.0%

General Appraisal		CODE	COUNT	%		
GOOD	66.4%	9 Excellent	9	46	35.9%	
		8 Very good	8	16	12.5%	
		7 Good	7	23	18.0%	
FAIR	31.3%	6 Satisfactory	6	33	25.8%	
		5 Fair	5	7	5.5%	
POOR	2.3%	4 Poor	4	3	2.3%	
		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	0	0.0%
			128	100.0%		

FHWA Performance Measures

Performance	% Deck Area		Lowest of GA or Deck	COUNT	Deck s.f
GOOD	69.0%	40.6%	9 Excellent	46	106,057
		13.6%	8 Very good	15	35,456
		14.9%	7 Good	23	38,874
FAIR	28.3%	23.7%	6 Satisfactory	34	61,974
		4.6%	5 Fair	7	12,107
POOR	2.7%	2.7%	4 Poor	3	7,058
		0.0%	3 Serious	0	0
		0.0%	2 Critical	0	0
		0.0%	1 Imminent Failure	0	0
		0.0%	0 Closed	0	0
100.0%		100.0%	128		261,527

(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%	(SC)
BIM - 18 months	0	100.0%	(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 culvert spans	1	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				

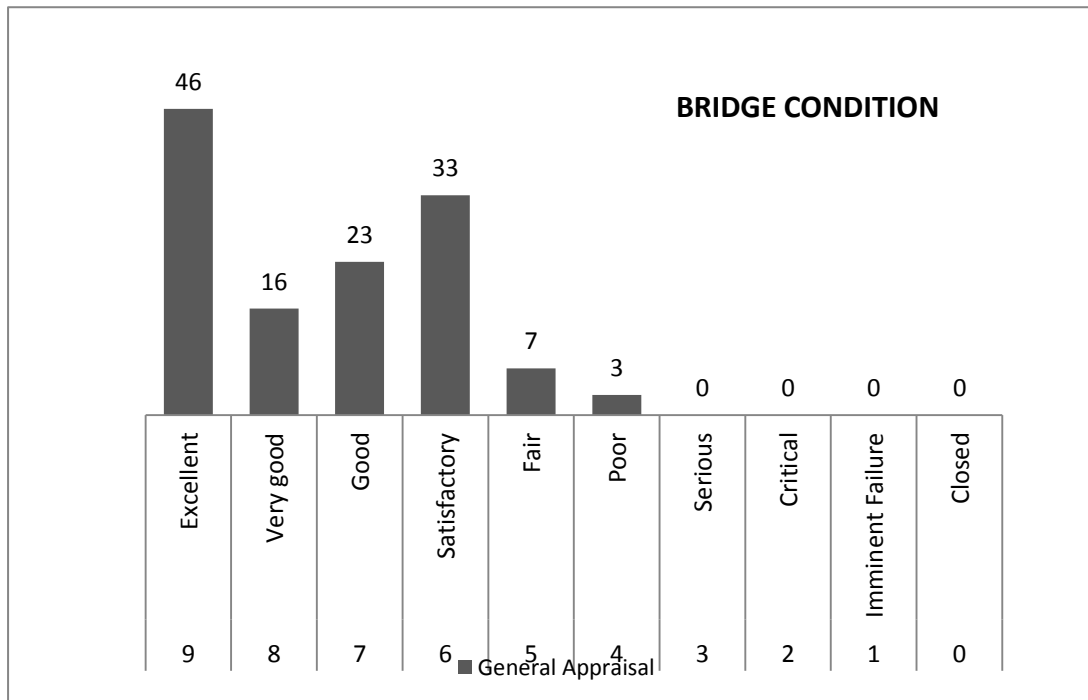
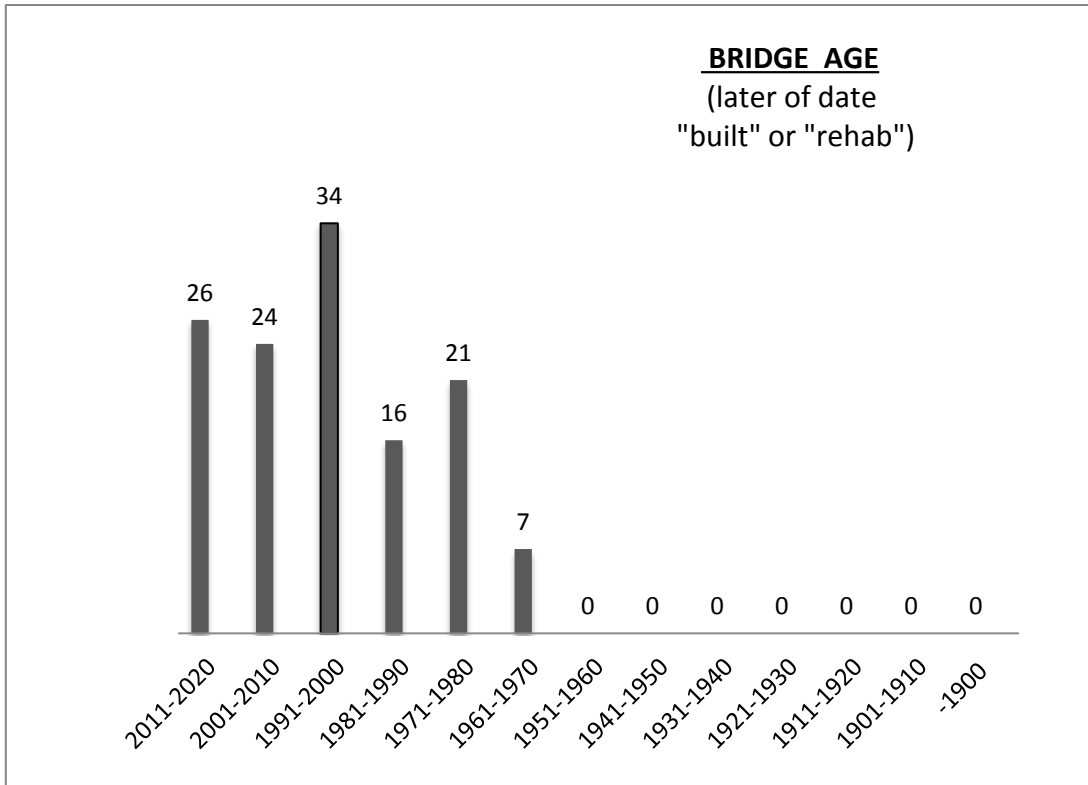
** based on results of Field Review

Metric Action Needed

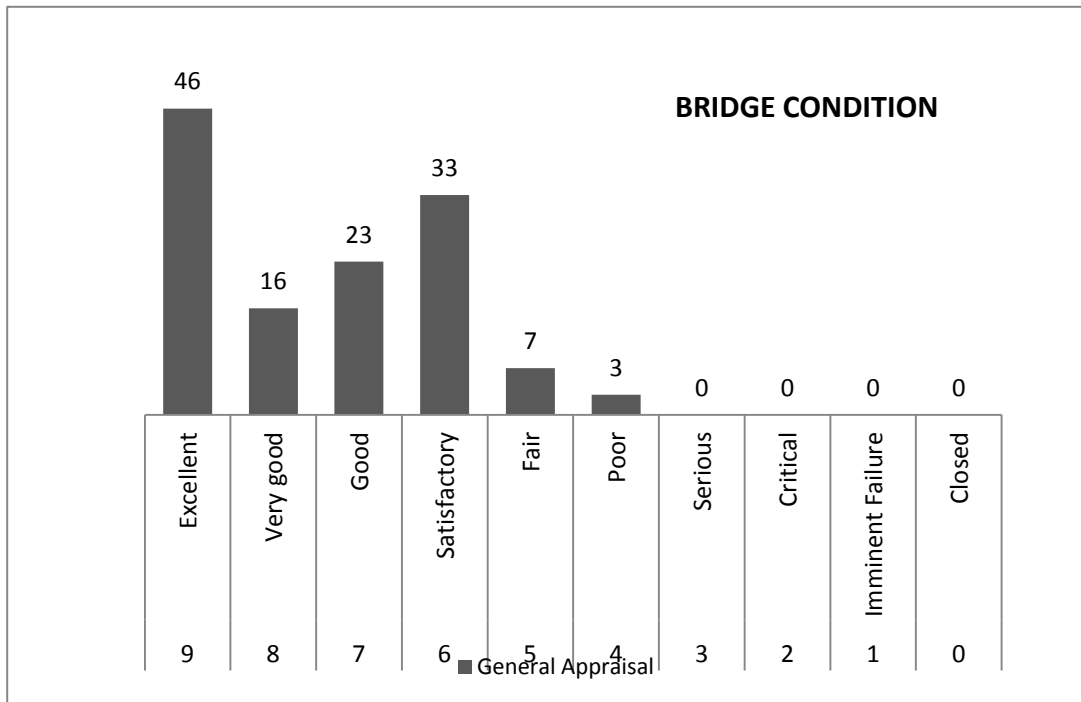
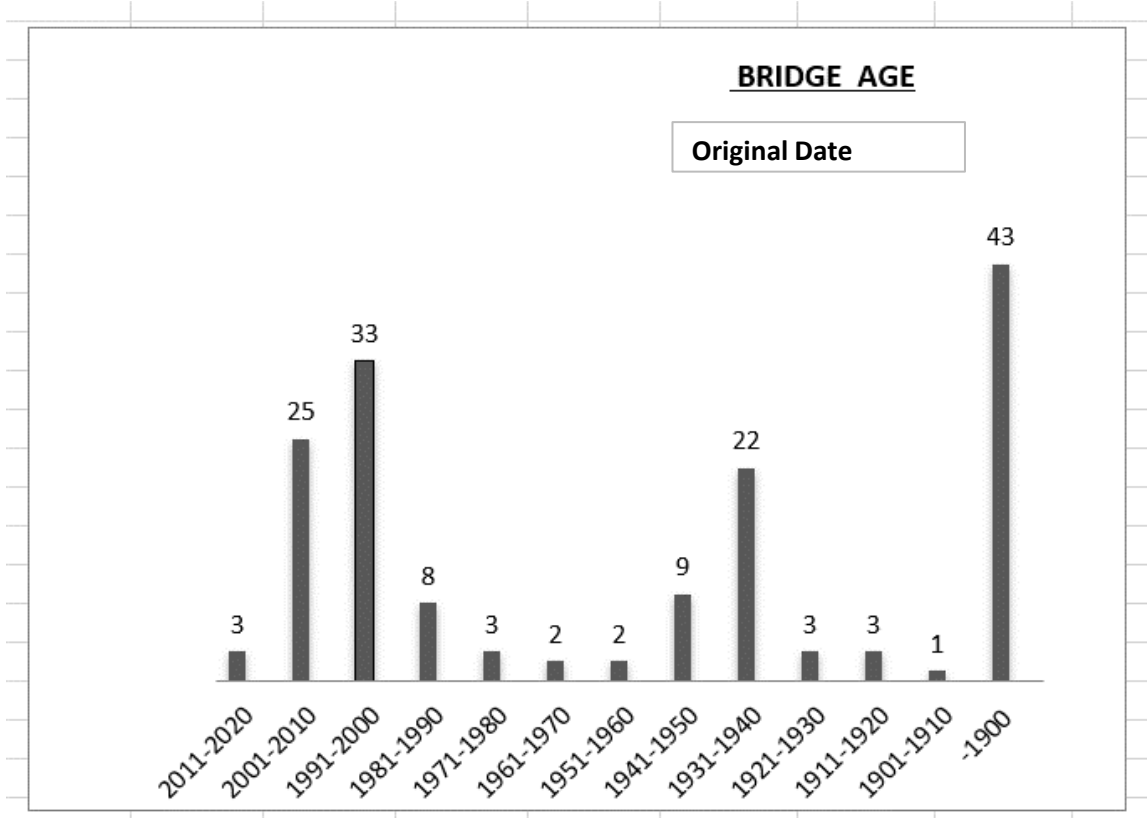
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AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other



AGE VS. CONDITION



GENERAL APPRAISAL COMPARISON

