Summit County 2019 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Inventory Data - BR 87 NBIS Bridges Only

	NBIS COUNT
NBIS Bridges > 20'	**152**
Bridges 10'-20'	**131**
	283

***Possible NBIS length errors** 11

Item 221	Inspection Responsibility	CODE	COUNT	%
	County	3	152	100.0%
Item 21	***Maintenance responsibility**			
	County	3	150	98.7%
	City or other local	4	1	0.7%
	Railroad	6	0	0.0%
	Private	7	0	0.0%
	Combination	8	0	0.0%
	ODNR	A	0	0.0%
	Park District	C	0	0.0%
	Township	F	1	0.7%
			152	100.0%
Item 42A	***Type service on bridge**			
	Other	0	0	0.0%
	Highway	1	122	80.3%
	Railroad	2	0	0.0%
	Ped/Bikeway	3	1	0.7%
	Hwy/RR	4	0	0.0%
	Hwy/Ped	5	29	19.1%
	RR Abnd. rails rem'vd	A	0	0.0%
			152	100.0%
Item 42B	***Type service under bridge**			
	Hwy w/ or w/o Ped	1	0	0.0%
	Railroad	2	4	2.6%
	Ped/Bkwy	3	0	0.0%
	Hwy w/ RR	4	0	0.0%
	Waterway	5	147	96.7%
	Hwy/Waterway	6	0	0.0%
	RR/Waterway	7	1	0.7%
	Relief (RR w/o tracks)	9	0	0.0%
			152	100.0%

ITEMS	Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab simple	111	19	12.5%
	concrete slab continuous	112	23	15.1%
	concrete beam simple	121	9	5.9%
	concrete frame simple	171	10	6.6%
	concrete culvert filled	195	18	11.8%
	prestressed conc. beam simple	221	4	2.6%
	prestressed conc. beam continuous	222	2	1.3%
	Explain continuity - PPB normally not			
	prestressed conc. box beam simple	231	28	18.4%
	prestressed conc. box beam continuous	232	6	3.9%
	steel beam simple	321	10	6.6%
	steel beam continuous	322	13	8.6%
	steel truss deck	343	1	0.7%
	steel culvert filled	395	7	4.6%
	aluminum culvert filled	695	1	0.7%
	steel truss (pony)	34A	1	0.7%
			152	100.0%

Item 92A	*Fracture Critical	CODE		COUNT	%
	fracture critical member	Y		2	1.3%
	fracture critical member	N		148	97.4%
				150	98.7%
	No. of steel trusses and girders	2	34x, 36x	2	
			2 Blank Codes		

Item 113	Scour			
	Bridge not over waterway	N	4	2.6%
	unknown foundation	U	0	0.0%
	over tidal waters	T	0	0.0%
	foundations on dry land	9	9	5.9%
	stable above footing	8	121	79.6%
	Discuss Scour code 8			
	countermeasures installed	7	1	0.7%
	no scour evaluation made	6	0	0.0%
	stable within footer limits	5	12	7.9%
	stable action needed	4	5	3.3%
	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%
			152	100.0%

Scour Photos Done?

Item 92B	*Underwater	CODE	COUNT	%
	requires dive inspection	N	136	89.5%
	requires dive inspection	Y	14	9.2%
	dive inspection dates		15	9.9%
			150	108.6%
		2 Blank Codes		

Item 709	Plan Information	CODE	COUNT	%
	no plans	0	14	9.2%
	plans available	1	133	87.5%
	field information	2	3	2.0%
	not applicable	N	2	1.3%
			152	100.0%

Item 63	*Documented Engineering Judgment			COUNT	%
	Field Eval & Doc EJ			12	7.9%
	Rating Code in Error	D and F	0 171 or 195	0	
			BR_100 for these bridges?		

ITEMS	Rating Factor (Items 64, 66)		COUNT	%
	Inventory RF = Operating RF		0	0.0%
	Inventory Rating Factor < 40%Operating RF (Too Low)	*	2	1.3%
	Operating Rating Factor < 40% Ohio % Legal (Too Low)		0	0.0%
	Op RF < 0.61 not Posted		1	0.7%
	Op RF in tons for Eng Judgment		0	0.0%

Item 580	*Deep Culverts (depth of fill)		COUNT	%
	Culvert	fill>6.5'	4	2.6%

Items	*195 Culvert vs 171 Frame (Items 43A, 43B, 43C)	COUNT	%
	# that do NOT meet the 2' Rule	1	0.7%

Item 63	*Method of Analysis	CODE	COUNT	%
	Field Eval & Doc. Eng Judgment	0	12	7.9%
	Load testing	4	0	0.0%
	No Rating done	5	1	0.7%
	Load Factor (LF)	6	119	78.3%
	WS or AS	7	5	3.3%
	Load & Resistance Factor	8	15	9.9%
	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%
			152	100.0%

Inspection Condition Data - BR 86 NBIS Bridges Only

Item 41	*Operating Status	CODE	COUNT	%
	Open, No restriction	A	141	92.8%
	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	0.7%
	Posted for load capacity	P	10	6.6%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			152	100.0%

	*General Appraisal		CODE		COUNT	%
		9 Excellent	9		10	6.6%
GOOD	57.9%	8 Very good	8		31	20.4%
		7 Good	7		47	30.9%
FAIR	36.8%	6 Satisfactory	6		42	27.6%
		5 Fair	5		14	9.2%
		4 Poor	4		3	2.0%
POOR	5.3%	3 Serious	3		4	2.6%
		2 Critical	2	K	1	0.7%
		1 Imminent Failure	1	K	0	0.0%
		0 Closed	0	K	0	0.0%
					152	100.0%

FHWA Performance Measures

Performance		% Deck Area			Lowest of GA or Deck	COUNT	Deck s.f
			3.3%	9	Excellent	9	20,215
GOOD		66.7%	26.4%	8	Very good	28	163,364
			37.0%	7	Good	50	228,593
FAIR		28.5%	15.2%	6	Satisfactory	42	93,699
			13.3%	5	Fair	13	82,208
			1.8%	4	Poor	4	11,158
POOR		4.8%	1.6%	3	Serious	4	9,619
			1.4%	2	Critical	2	8,900
			0.0%	1	Imminent Failure	0	0
			0.0%	0	Closed	0	0
		100.0%	100.0%			152	617,756

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	9	5.9%
			1931-1940	28	18.4%
			1941-1950	6	3.9%
			1951-1960	8	5.3%
			1961-1970	13	8.6%
			1971-1980	11	7.2%
			1981-1990	17	11.2%
			1991-2000	29	19.1%
			2001-2010	22	14.5%
			2011-2020	9	5.9%
				152	100.0%

Load Rating Errors	COUNT
Item 708 Software not calculated but Method of Rating shows calcs	1
Legal Load RFs should not be equal	3
% Legal does not match lowest RF	3
Inv RF too low or Op RF too high	2
GVW is incorrect	1

Load Ratings Due	COUNT
SHV due end 2020 DONE	26
SHV load ratings Due end 2020	21
EV Load Ratings DONE	25
EV Load Ratings Due end 2022 - ON HOLD	27

Note - 1 EV done not part of deadline

(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)	6	96.1%	(C)
Bridges to be posted but aren't (Op Status code B)	0	100.0%	(C)

OK - Load Rating after Inspection

METRIC 22 - Inventory (partial review)

Structure Length	ACTUAL COUNT	COMPLIANCE	
Number of bridges with length or span difference	0		(C)
***Culvert Span**			
unusually long steel culvert spans	0		(C)
***Location**			
Item 9 Location	3		depends on sample size
missing coordinates	0		(C)

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

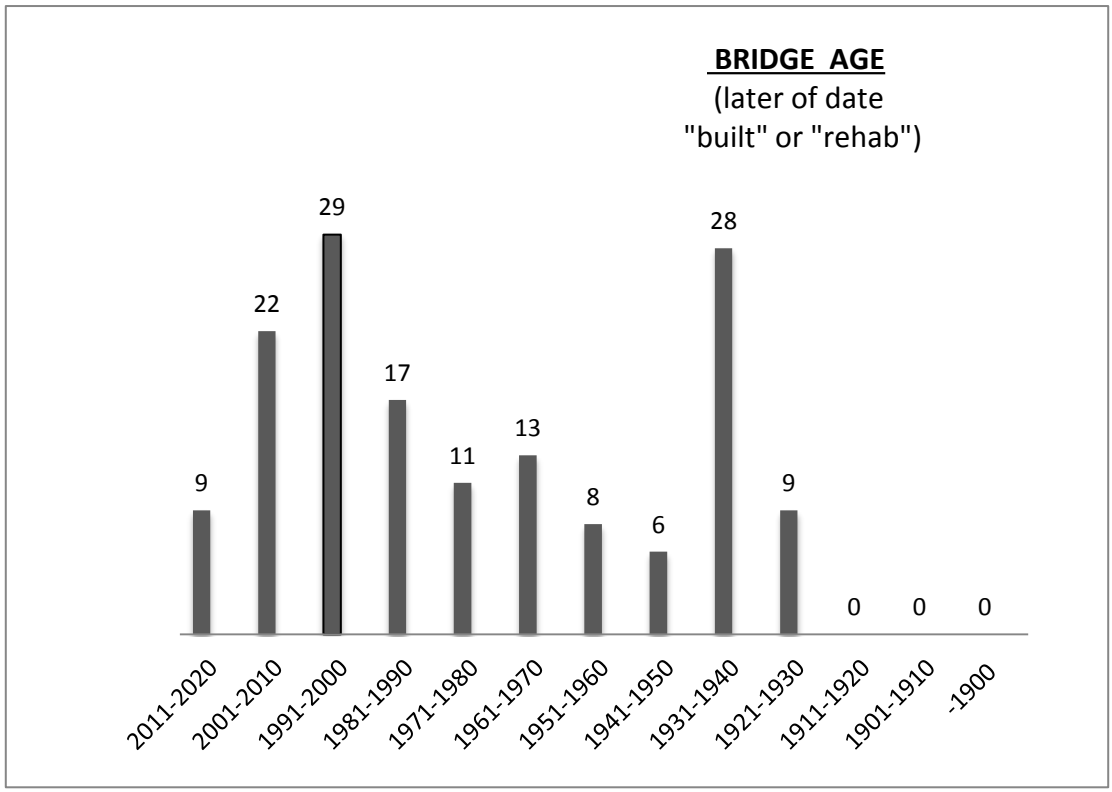
Metric	Description	(C)	(SC)	(CC)	(NC)
1	State Bridge Inspection Organization				
2	Program Manager Qualification				
3	Team Leader Qualification				
4	Load Rating Engineer Qualification				
5	UW Bridge Inspection Diver Qualification				
6	Routine Inspection Frequency - Low Risk				
7	Routine Inspection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

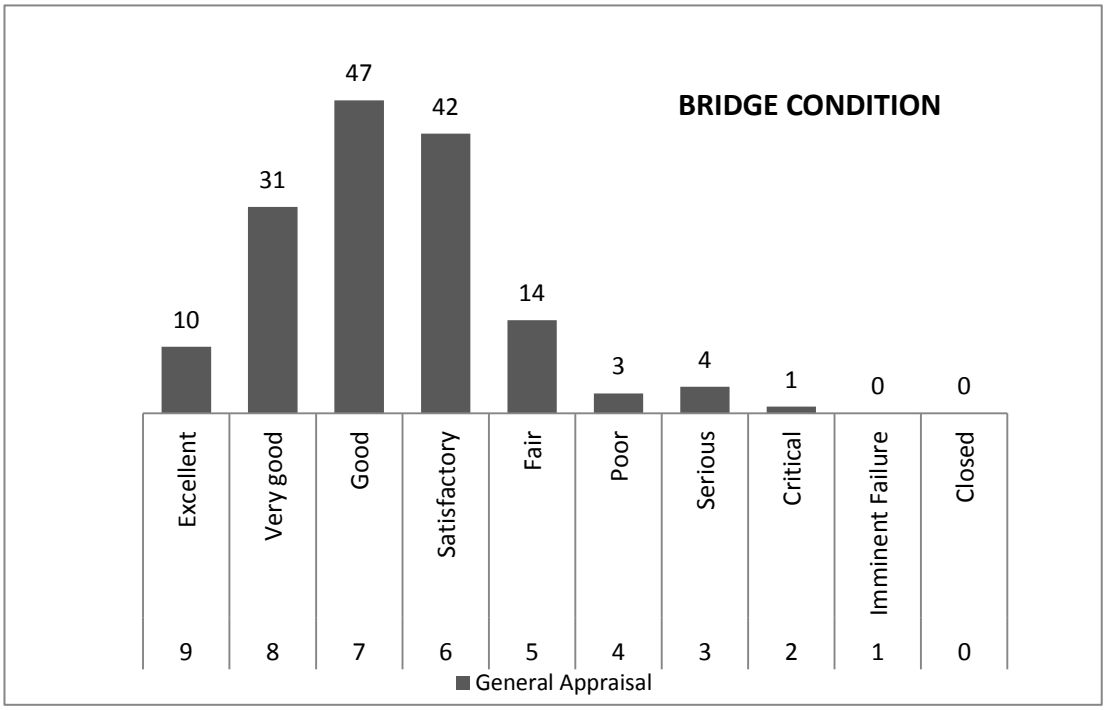
** based on results of Field Review

Metric	Action Needed
12	Provide complete comments on all bridges where the Summary <=5
22	Check Approach Alignment Item 72 on all bridges

AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other





GENERAL APPRAISAL COMPARISON