KNOX County 2021

INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

10/19/2021

Inventory Data - NBIS Bridges Only

	NBIS COUNT
NBIS Bridges > 20'	198
Bridges 10'-20'	126
	324

Item 22 Inspection Responsibility		CODE	# NBIS	# ALL
Data Tab Col BV,BW	County	2	198	324

Item 21 Maintenance responsibility		CODE	# NBIS	# ALL
Data Tab	County	2	198	324
Col D	City or other local	4	0	0
	Railroad	27	0	0
	Private (tohter than RR)	26	0	0
	State Park	11	0	0
	Local Park	23	0	0
	Township	3	0	0
			198	324

Item 42 Type service on bridge		CODE	# NBIS	# ALL
Data Tab	Other	0	0	0
Col Q	Highway	1	196	319
	Railroad	2	0	0
	Ped/Bikeway	3	1	1
	Hwy/RR	4	0	0
	Hwy/Ped	5	1	4
			198	324

Item 42 Type service under bridge		CODE	# NBIS	# ALL
Data Tab	Other	0	0	0
Col R	Hwy w/ or w/o Ped	1	0	0
	Railroad	2	0	0
	Ped/Bkwy	3	0	0
	Hwy w/ RR	4	0	0
	Waterway	5	197	323
	Hwy/Waterway	6	1	1
	RR/Waterway	7	0	0
	Hwy/Waterway/RR	8	0	0
	Relief (for waterways)	9	0	0
			198	324

ITEMS 43A,B,C Structure Type (Col M,N,O)	CODE	# NBIS	# ALL
Concrete Slab	101	7	27
Concrete Girder	103	1	1
Concrete Tee Beam	104	2	2
Concrete Box Beam/Girder Multiple	105	0	3
Concrete Frame	107	2	38
Concrete Deck Arch	111	1	1
Concrete Culvert (incl frame culverts)	119	1	24
Concrete Continuous Slab	201	3	3
Steel Beam or Girder	302	66	76
Steel Girder w/ Floor System	303	1	1
Steel Thru Truss (inlcudes Pony)	310	17	17
Steel Culvert (incl frame culverts)	319	0	22
Steel Continuous Beam or Girder	402	5	5
Prestressed Concrete Slab	501	0	2
Prestr. Conc. Cont. Box Beam/Girder Multiple	505	78	84
Prestressed Concrete Continuous Thru Arch	602	1	1
Prestr. Conc. Cont. Box Beam/Girder Multiple	605	8	8
Timber Slab	701	2	2
Timber Deck Arch	811	1	1
Aluminum or Iron Culvert (incl frame culverts)	919	2	6
		198	324

Item 92 Fracture Critical		CODE	# NBIS	# ALL
Data Tab	Requires FC Inspection	Y	17	n/a
Col U,V,Y	Requires FC Inspection	N	181	n/a
			198	n/a
	FC Switch Y/N is Blank		0	n/a

KNO-00011-0003 _(4230434) should remove FC inspection date for this concrete slab from Assetwise Column Y in the Data TAB

Item 113 Scour				# NBIS	# ALL
Data Tab	Bridge not over waterway	N		0	0
Col AA	unknown foundation	U		0	0
	over tidal waters	T		0	0
	foundations on dry land	9		4	4
	stable above footing	8		44	57
	countermeasures installed	7		10	13
	no scour evaluation made	6		0	0
	stable within footer limits	5		101	197
	stable action needed	4		39	52
	scour critical - unstable	3		0	1
	scour critical - scour present	2		0	0
	scour critical - failure imminer	1		0	0
	scour critical - bridge failed	0		0	0
				198	324

Item 63 Documented Engineering Judgment		# NBIS	# ALL
	Field Eval & Doc EJ	1	n/a

BR_100 for these bridges?

Item 92 Underwater		CODE	# NBIS	# ALL
Data Tab	requires dive inspection	N	195	n/a
Col W,X,Z	requires dive inspection	Y	0	n/a
			195	
	dive insp date blank		3	

Columns W&X left blank in Data TAB for underwater inspection. Should be coded 0 and N respectively

KNO-T0399-00.10_(4237081); KNO-T0365-00.41_(4237580); KNO-00013-00.46_(4234309)

Item 70 Plan Information		CODE	# NBIS	# ALL
Data Tab	plans not avail	0	3	18
Col. AW	plan avail	1	143	246
	field measured	2	51	55
	Field Testing	3	0	0
	not applicable	N	1	1
			198	320

Item 63 Method of Analysis		CODE	# NBIS	# ALL
Data Tab	Field Eval & Doc. Eng Judgme	0	1	16
Col. AW	Work Stress	1	0	0
	LFR	2	0	0
	LRFR	3	0	0
	Load testing	4	0	0
	No Rating done	5	1	60
	Load Factor (LF)	6	86	105
	WS or AS	7	52	60
	Load & Resistance Factor	8	58	83
	Assigned Rating (LFR) HS20	D	0	0
	Assigned Rating (LRFR) HL9	F	0	0
	Not applicable (Ped, RR, Bldg	X	0	0
			198	324

REMINDER:

Load Factor required for bridges built afte (exceptions: timber, etc,)

LRFR required for bridges built after 2010

Inspection Condition Data - NBIS Bridges Only

Item 41	Operating Status	CODE	# NBIS	# ALL
Data Tab	Open, No restriction	A	166	281
Col AM	Open, posting recommendec	B	0	0
	Open, Half width constr.	C	0	0
	Open because of temp. fix	D	0	0
	Open using temp. structure	E	0	0
	New struture not yet open	G	0	2
	closed for load cap. reason	K	2	2
	Posted for load capacity	P	29	38
	Posted for other than load	R	1	1
	Closed for other than load	X	0	0
			198	324

Load Rating Data

Load Rating Tab		# OF ERRORS
Col. AN	Op RF greater than Inv RF?	0
Col. AO	Posting and % Legal OK?	0
Col. AP	"0" used instead of blank	0
Col. AT	% legal <> lowest RF	1
Col.A V	Item 70 correct?	0
Col. AW	Method of Rating Alike?	0
Col. AX	Op & Inv RF in Tons as req'd?	0
Col. AY	Item 575 correct?	0
Col. AZ	Depth of fill completed?	0

198 NBIS Bridges load rated

KNO-00121-0004 _(4236394) 150% legal but coded P in Column AT

19 load rated NBIS bridges lacking EV2and EV3 load ratings

KEY METRICS

(C)	Compliant	(CC)	Conditionally Compliant
(SC)	Substantially Compliant	(NC)	Non- Compliant
		(NC)	(SC) If corrected within 6/12 months
			Refresher=6 mo, Comprehensive=12 mo

METRIC 2 – Program Manager Qu (from files examination)

From Files review	Missing	#sampled	% PASS	COMPLIANCE
PE /Experience	0	1	100.0%	(C)
Comprehensive	0	1	100.0%	(C)
Refresher	0	1	100.0%	(C)

METRIC 3 – Team Leader Qualifi (from files examination)

From Files review	Missing	#sampled	% PASS	COMPLIANCE
Degree /Experience	0	3	100.0%	(C)
Comprehensive	0	3	100.0%	(C)
Refresher	0	3	100.0%	(C)

METRIC 6 Insp. Frequency Routine

Bridge Inspections Overdue		Overdue		% PASS	COMPLIANCE
Data Tab	NBIS –	24 months	0	100.0%	(C)
Col. Y	ORC –	Calendar Year	0	100.0%	(C)
	BIM –	18 months	0	100.0%	(C)

METRIC 8 – Insp. Frequency Underwater

Dive Inspections Overdue		# OVERDUE	# UW	% PASS	COMPLIANCE
Data Tab Col. Z	60 months	0	**0**	100.0%	(C)

METRIC 10 – Insp. Frequency FC Member

FC Inspections Overdue		# OVERDUE	# FC	% PASS	COMPLIANCE
Data Tab Col. Y	24 months	0	**17**	100.0%	(C)

METRIC 12 – Routine Inspection		"(from files examination)				
Field Ratings		**# > +/-1**	**# Ratings**	**% PASS**		**COMPLIANCE**
	field ratings	**0**	**30**	100.0%		(C)
Comments		**Missing**	**# < 6**	**% PASS**		
Tab	Comments when Rating < 6	19	195	90.3%		(C)
	Inadequate comments"	0	30	100.0%		(C)
		Error	**otal Scou**	**% PASS**		
Comment	Rating should be = Scour	2	194	99.0%	within tolerance +/- 1	
Tab	Noncompliant Scour Rating E	0	194	100.0%		(C)

Mixed Bag Many bridge had excellent comments and others had brief simple or general comments. Many bridges in Assetwise showed no comments

19 bridges missing comments where items rated 5 or below, see Comments TAB

KNO-C0038-0250 _(4232313); KNO-00401-0003 _(4231716)

Scour controls Substructure on the 2 bridges above. See Comment TAB

METRIC 14 – Posting	Load rating data tab					
From Files review		**# errors**	**#sampled**	**% PASS**		**COMPLIANCE**
Op RF < 3 tons but not close	Column BE	0	198	100.0%		(C)
Op RF = 0 but not closed	Column BC	0	198	100.0%		(C)
% Legal < 100 but not postec	Column BE	1	198	99.5%		(SC)
Item 41 = B	Column BE	0	198	100.0%		(C)

You have 38 bridges that are coded as P posted, yet there is no date in Assetwise for signage being erected 36 of those bridges. See Load rating TAB

KNO-00121-0004 _(4236394) same bridge as above in load rating table

METRIC 16 – Fracture Critical Ins	(from files examination)			
From Files review	**Missing**	**# FC**	**% PASS**	**COMPLIANCE**
Fract Critical Member ID	0	2	100.0%	(C)
Fatigue Prone Detail	0	2	100.0%	(C)
Gusset Plate Calculations	0	2	100.0%	(C)
FC Inspection Procedure	0	2	100.0%	(C)

METRIC 17 – Underwater Inspecti	(from files examination)			
From Files review	**Missing**	**# UW**	**% PASS**	**COMPLIANCE**
UW Inspection Procedure	0	1	100.0%	(C)
Location of UW elements	0	1	100.0%	(C)
UW frequency identified	0	**1**	100.0%	(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	Scour Rating should control Substructure or Deck
14	Assetwise coding correction needed for 38 bridges