

9th National Conference on Transportation Asset Management

April 16-18, 2012

San Diego, California

Integrated Bridge Inspection and Management System for the State of Minnesota

inspect^ttech

MICHAEL SCHELLHASE
JEREMY SHAFFER
BEN WITTER

Mn/DOT Overview

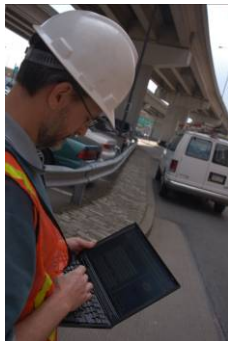
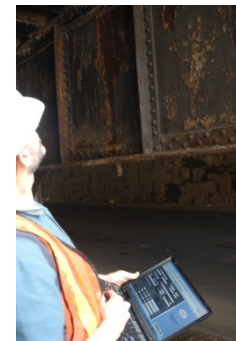
- Responsible for over 13,000 bridges greater than 20 ft.
- Previous system: multiple databases
- Replaced with a new system to inspect and manage structures
- Software allowed for improved analysis and communication among offices
- Developed a complete repository for all bridge information



Inspection Software

BridgeInspect™ Collector

*High quality inspections done easier,
quicker, and more reliably.*

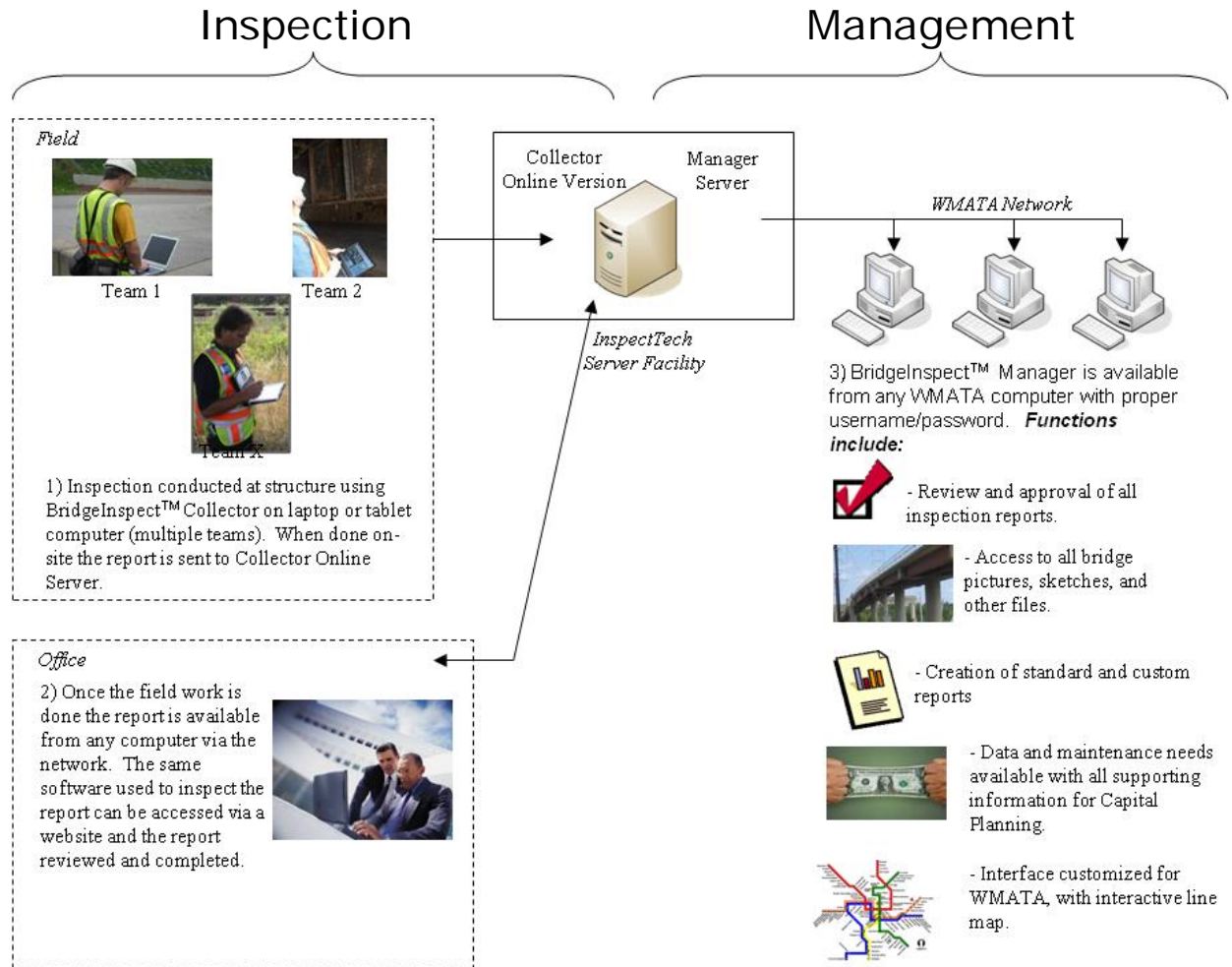
A screenshot of the BridgeInspect Collector software interface, displayed in a Microsoft Internet Explorer browser window. The interface has a menu bar with options like File, Edit, View, Favorites, Tools, and Help. Below the menu bar are several tabs: P-0192901, New S&A Forms, Points, PGMB Forms, Report Forms, OM S&A Forms, and Main Menu. The main content area is titled "SI&A Form 6 - Condition Ratings" and contains various input fields for inspection data. On the right side, there is a "Deck" section with a dropdown menu showing condition ratings from 0 to 9. The "inspect^tech" logo is visible at the bottom right of the interface.

Inspection Software

- All information and reports integrated into one place
- Single point of entry for coding, narrative, pictures, and other attachments
- Laptops and Web Based System
 - Multiple Personnel can work on same report in the field (data merged on server)
 - Laptops and Server easily synchronize data and update necessary program files
- Tab based, interactive form entry for all information
- Built-in Error Checks and manuals

Overview

- Start inspection on laptop/tablet
- Submitted to Web-Server when in office
- Report continued from any computer
- Submitted for review
- Reviewed and approved online
- Able to run reporting and searching on data



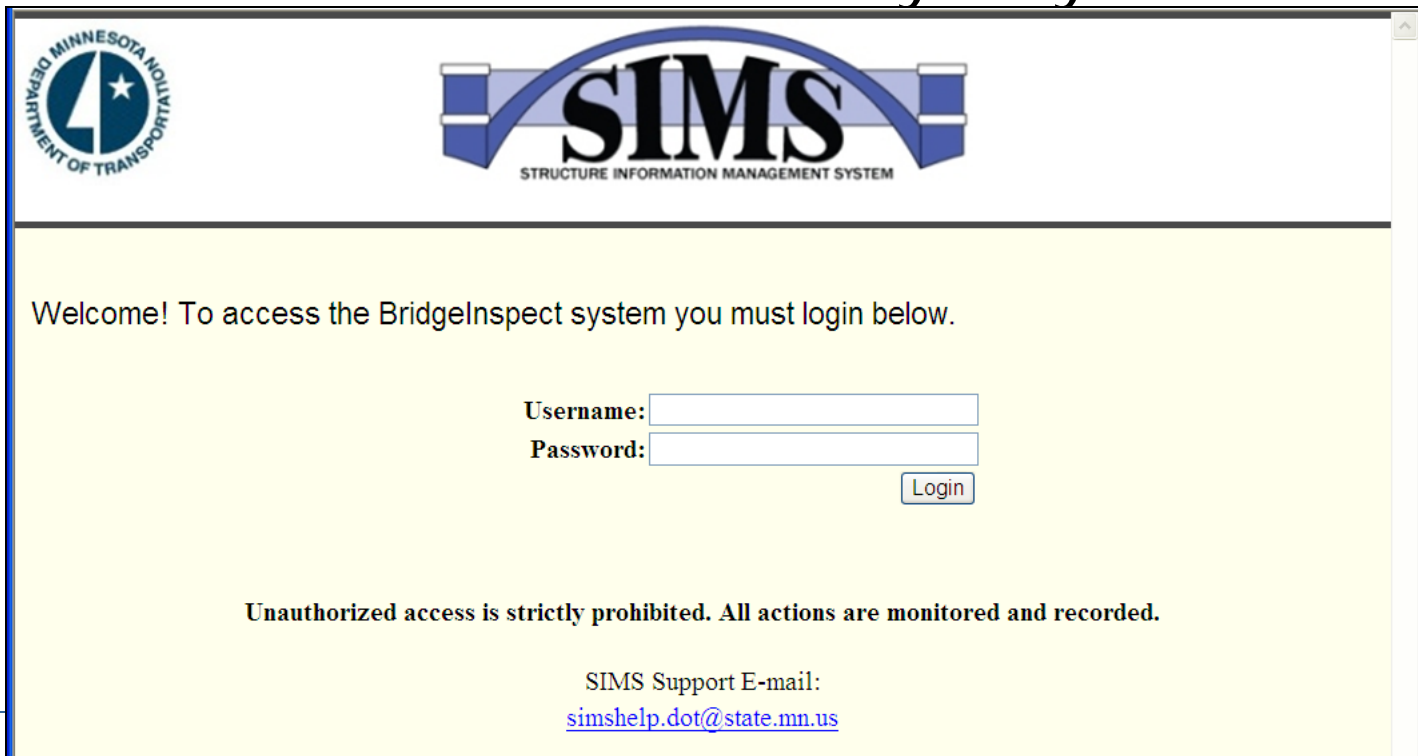
Inspection Software



Major Benefits

- Electronic collection: Reduces errors and eliminates redundant data entry
- Picture Organization
- Integration of Manuals
- Easy incorporation of attachments
- Automatically pre-load past data
- Saves significant time by formatting the report and auto-generating many sections:
 - Table of Contents
 - Cover Page
 - Picture Pages
 - Page Numbering

Familiar Web Based Interface

- Very Easy to Support
- Access from Anywhere
- Usernames drive permissions
- Allow Consultant and County/City Access



Welcome! To access the BridgeInspect system you must login below.


Username:

Password:

Unauthorized access is strictly prohibited. All actions are monitored and recorded.

SIMS Support E-mail:
simshelp.dot@state.mn.us

Inspection Interface for multiple user types





Messages: 0 new ([view](#))

Quick Select:

[View asset group](#)

[Main](#)
[Administration](#)
[Views](#)
[GIS](#)
[Help](#)

InspectTech : Zink, Jennifer ([Logout](#))

[In Progress \(24\)](#)
[In Progress on a Laptop \(15\)](#)
[Awaiting Approval \(2\)](#)
[Recently Approved \(5\)](#)

Inspection Date	Asset Code	Asset Name	Owner	Asset Type	Inspection Type	NBI 7: Facility Carried by Structure	NBI 6A: Feature Intersected: Narrative		
01/19/2011	9320	9320	Administrator, InspectTech	Bridge	Routine	I 90	MISSISSIPPI RIVER		
01/11/2011	74J05	74J05	Pierce, Jim	Bridge	Routine	CSAH 43	Ditch		
01/11/2011	9800	9800	Pierce, Jim	Bridge	Routine	US 52(Lafayette)	MISS R, RR & STREETS		
01/11/2011	27055	27055	Pierce, Jim	Bridge	Routine	St Anthony Pkwy	TH 47 (University Ave)		
01/10/2011	36012	36012	Administrator, InspectTech	Bridge	Routine	US 71	BIG FORK RIVER (S CHAN)		
01/10/2011	9320	9320	Zink, Jennifer	Bridge	Fracture Critical	I 90	MISSISSIPPI RIVER		
01/01/2011	5900	5900	Hedeen, David	Bridge	Fracture Critical	TH 43	MISS RVR, RR, STREETS		
12/06/2010	36012	36012	Administrator, InspectTech	Bridge	Routine	US 71	BIG FORK RIVER (S CHAN)		
12/03/2010	36012	36012	Elmquist, Gary	Bridge	Routine	US 71	BIG FORK RIVER (S CHAN)		
12/03/2010	36006	36006	Elmquist, Gary	Bridge	Routine	TH 217	BEAVER BROOK		
11/30/2010	69127	69127	Edstrom, Roger	Bridge	Routine	US 53 SB	TH 169		
11/30/2010	36016	36016	Edstrom, Roger	Bridge	Routine	PEDESTRIAN	JACKFISH BAY		

Typical Inspection Form

BridgeInspect Collector - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridges/inspection.aspx?id=196667&type=1

File Edit View Favorites Tools Help

BridgeInspect Collector

165-85-05527 BSBL

Primary Forms Aux. Forms SI&A FC/UW/Spec. P.o.A. Scour Load Rating Rpt. Info Seymour Main Menu

Gen. Inv. Appr. (72X) Deck (58) Superstruct. (59A) Paint (59B) Coll. Damage (59C) Substructure (60) Channel & Prot. (61) Culv./Underfill (62) Est. Rem. Life

DECK CONDITION (58)

OVERALL CONDITION RATING (58) Rating based on

	RATING	GOVERNING	COMMENTS
58.01 Wearing Surface	<input type="text" value="6"/>	<input type="checkbox"/>	Surface continues to wear. (Jerry Martin 5-21-09)
108A. Type of Wearing Surface	<input type="text" value="3"/>		
108C. Deck Protection:	<input type="text" value="0"/>	<input type="checkbox"/> Cathodic Protection	
58.02 Deck Underside	<input type="text" value="7"/>	<input type="checkbox"/>	
<input type="checkbox"/> Post-Tensioned			
58.03 Curbs	<input type="text" value="N"/>	<input type="checkbox"/>	
58.04 Copings	<input type="text" value="5"/>	<input type="checkbox"/>	Horizontal cracks in coping. (Jerry Martin 5-21-09)
58.05 Median	<input type="text" value="N"/>	<input type="checkbox"/>	
58.06 Sidewalks	<input type="text" value="N"/>	<input type="checkbox"/>	
58.07 Parapet (Concrete Railing)	<input type="text" value="7"/>	<input type="checkbox"/>	
58.08 Railing Post	<input type="text" value="N"/>	<input type="checkbox"/>	
58.09 Painted Lines	<input type="text" value="7"/>	<input type="checkbox"/>	
58.10 Drains	<input type="text" value="7"/>	<input type="checkbox"/>	
58.11 Down Spouts/Drain Pipes	<input type="text" value="7"/>	<input type="checkbox"/>	

58.04 Coping Comments

Details

Horizontal cracks in coping. (Jerry Martin 5-21-09)

Reference (Does Not Print):

Horizontal cracks in coping. (Jerry Martin 5-21-09)

Pictures (1)

Manuals

Central Database Value

Field History

inspect^tech

Done

Internet 100%

Link Pictures to allow Information to be Visually Communicated

MP 119.07

Field Forms Report Forms FHWA S&A Agency BPS Bridge Info

Basic Info I. Appr II. Above Deck III. A. Sub III. B. Sup III. C. Culv/RP/Conc III. D. Misc IV. General V. Exp. Joints VI. Schem. Plan VII. Spec. Cond/Def VIII. Pier Top (1) VIII. Pier Top (2) IX. B. Def. Matrix C. Def.

Session Information

ABUTMENT SLOPE ☒ No Defects ☐ N/A

Type **Concrete (South)**

☐ Slope Trough Clogged/Collapsed

☐ Cracking/Settlement at

☐ Spalling/Fractures at

☐ Cave-ins/Voids at

☐ Erosion at

☐ Toe Berm/Swale Overrun

PIER PADS/BEARING AREAS ☐ No Defects ☐ N/A

☐ Spalling/Fractures/Cracking at

☐ Scaling/Disintegration at:

☐ Rebar Exposed at

☒ Brg. Underside/Anchor Bolt Exposed

☐ Fixed ☒ EXP: Str 9 at P1

PIER CAP ☐ No Defects ☐ N/A

☒ Spalling/Fractures at:

☒ Extensive Cracking

☒ Scaling/Disintegration at:

☐ Coating Failure: Cracking/Peeling

☒ Rebar Exposed at

☐ Dirt Debris Buildup on Pier Top

☐ Section Misalignment of

P1: E. & W. Ends

P1: E. End Type Random

P1: E. & W. Ends

P1: E. & W. Ends

PIER COLUMNS/STEMS ☒ No Defects ☐ N/A

☐ Spalling/Fractures at:

☐ Extensive Cracking

Type

☐ Scaling/Disintegration at:

☐ Rebar Exposed at

PIER BASES/PEDESTAL/CRASHWALL ☐ No Defects ☒ N/A

Pier Cap - Spalling/Fractures (Desc)

Details

Pictures (7)

Select New Picture

Photo: 23

Photo: 19

Photo: 15

Photo: 2

Photo: 3

Photo: 16

Photo: 22

Central Database Value

Field History

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Internet 100%

Reference Pictures

032-83-03176

Primary Forms | Aux. Forms | SI&A | FC/UW/Spec. | P.o.A. | Scour | Load Rating | Rpt. Info | Crawfordville | Main Menu

Gen. Inv. | Appr. (72X) | Deck (58) | Superstruct. (59A) | Paint (59B) | Coll. Damage (505) | Substructure (60) | Channel & Prot. (61) | Culv./Underfill (62) | Found. (113B) | Est. Rem. Life

58.14 Utilities What/Where 7

☐ Gas ☐ Electric ☐ Telephone ☐ Water
☐ Sanitary Sewer ☐ Storm Sewer ☐ T.V. Cable ☐ R.R. Communication
☐ Other

	Rating	Length	Type	Location	Comments
58.15 Longitudinal Joints	N				
58.16 Transverse Joints (Overall)	N				
58.16A South/West	G		L		
58.16B Interior			N		
58.16C North/East	G		L		

OVERALL CONDITION RATING 5 (58) Rating based on

Overall 58. Deck Comments

The approaching pavement has gone through a recent improvement and is the reason for this rating upgrade. [Sherwood Garrison, 9/22/1999 12:00:00 AM]

(sqft)


58.20A Wearing Surface Del

58.20B Wearing Surface Spal


58.16 Transverse Joints Type

Details

Manuals



Page C - Tooth Joint (Finger Joint)



Field History

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Reference Manuals

08A032

Report Info WV SISA DS-25 DS-34 HBI Narrative District 1 Main Menu

WV (Sh. 1) WV (Sh. 2) WV (Sh. 3) WV (Sh. 4) WV (Sh. 5) WV (Sh. 6) Cond. & Appraisal (Sh. 8) Cond. & Appraisal (Sh. 9) Cond. & Appraisal (Sh. 10)

0 Direction Suffix

* 4 Mile Post 4.55

* 5 Bridge Design Number 5109

* 6 Direction 0 - Not Applicable

* 7 Feature Intersected 2 DOG RUN

* 8 Ground Level Bypass Possible 1

* 9 Bypass Detour Length 15 miles

* 10 Toll 0

* 11 Maintenance Responsibility 01

* 12 Owner 01

* 13 West Virginia Bridge Classification 1

* 14 Historical Significance 5

* 15 Legal Road Load 1 = 65,000 lbs gross load

* 16 District 1 = 65,000 lbs gross load
2 = 80,000 lbs gross load
4 = 120,000 lbs gross load

* 17 Date of Inventory

18 Permit Vertical Clearance 99 ft 99 in 99 ft 99 in

19 Permit Horizontal Clearance 14 ft 0 in 14 ft 0 in

20 Traffic Safety Features 0 Traffic Situation

Legal Road Load

Details

Pictures

Manuals

PDF Adobe Page 7

PDF Adobe Page 25

Central Database Value

Field History

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Sheet 1 of 10

FORM DS-25
5-1-85

WEST VIRGINIA DIVISION OF HIGHWAYS
STRUCTURE INVENTORY AND APPRAISAL

Bridge No: _____ Page No: _____ Date: _____

ITEM INVENTORY

1* CARD TYPE ----- 1 A

2* CONTROL NUMBER (BARS) ----- 1 A

3* INVENTORY ROUTE -----

4* MILE POST -----

5* BRIDGE DESIGN NUMBER -----

6* DIRECTION -----

7* FEATURE INTERSECTED -----

8* GROUND LEVEL BYPASS POSSIBLE (Y = YES, N = NO) -----

9* BYPASS DETOUR LENGTH -----

10* TOLL -----

11* MAINTENANCE RESPONSIBILITY -----

12* OWNER -----

13* BRIDGE CLASSIFICATION -----

14* HISTORICAL SIGNIFICANCE -----

15* LEGAL ROAD LOAD (15,000 = "1", 25,000 = "2", 40,000 = "3", 75,000 = "4") -----

16* DISTRICT -----

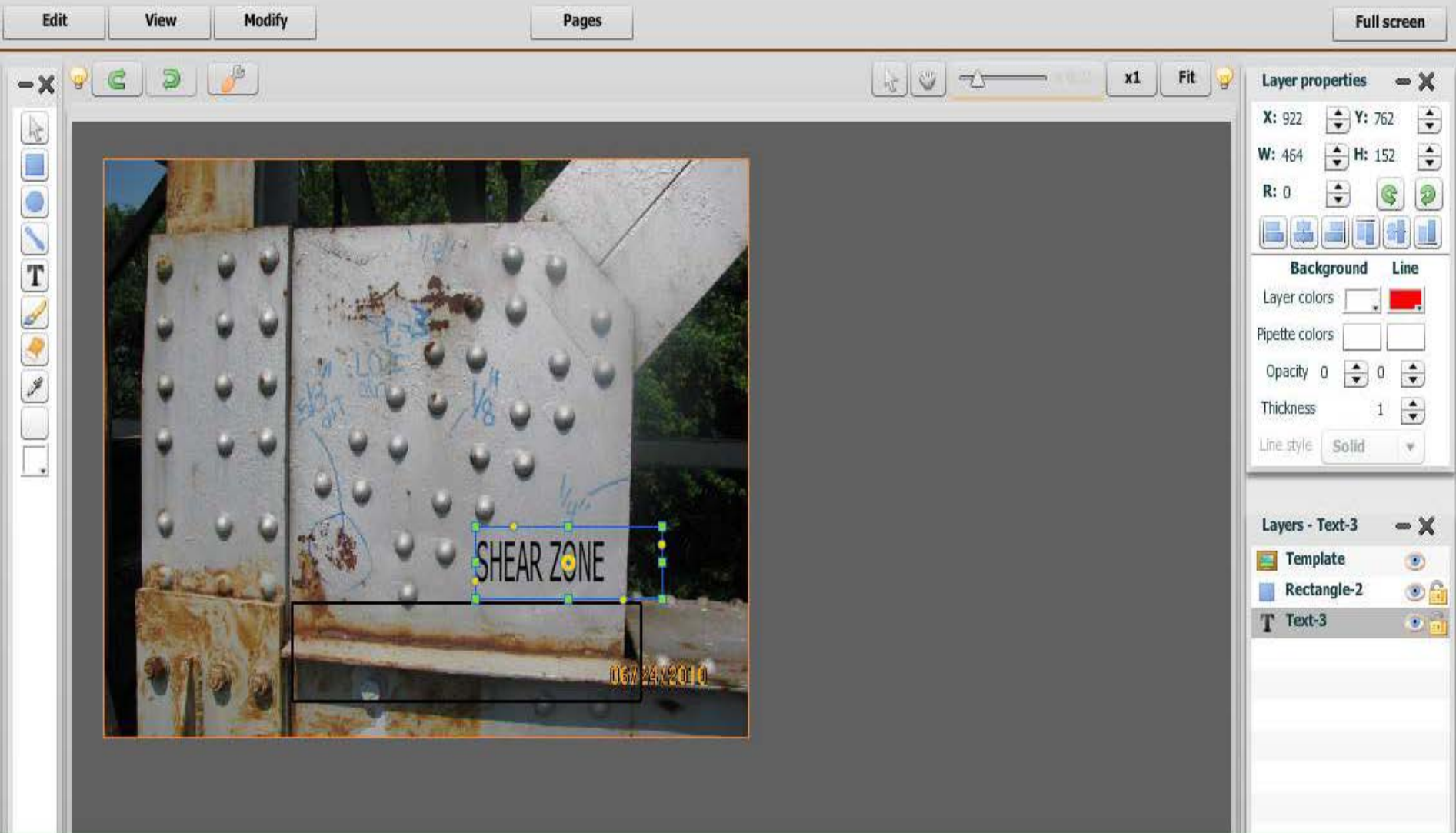
17* DATE OF INVENTORY ----- MO YR

18 PERMIT VERTICAL CLEARANCE ----- NO/YES

19 PERMIT HORIZONTAL CLEARANCE -----

* Indicates items required for non-highway bridge

Annotate Pictures for showing data



Integrated Maintenance Flags with Pictures and Sketches

Bridgeinspect Collector - Windows Internet Explorer

http://www.bridgespect.com/inspection.aspx?id=6704&type=1

Span 5398.08

Box Girder Rpt. Info

Structure Critical Areas Form 22 Box Girder Inspector Box Girder Inspector Track Bed and Deck Form 22 Reactions Slabs

Grosvenor Aerial Structure Main Menu

TRACK BED AND DECK

I. Inspect:	Rating	Remarks
a. Deck	6	
b. Conduits	4	
c. Exposed or deteriorating rebars	6	
d. Grout Pads	6	
e. Handrails	6	
f. Acoustic Panels	4	
g. Fencing	4	
h. Safety Walk	4	- Safety walk plate at 539+55 not attached. - 65 of the 242 safety walk screws are missing, 5 plates completely unattached.
i. Unit Alignment	6	
j. Joints (Expansion, construction, cold)	6	

Safety Walk Remarks

Details

- Safety walk plate at 539+55 not attached.

- 65 of the 242 safety walk screws are missing, 5 plates completely unattached.

Flags:

EEA ☒ | SH ☐ | E ☐ | A ☐

A flag is present for this item. Go to the Flags form for more details.

Description:

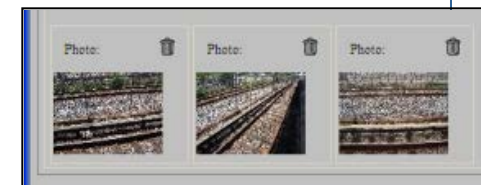
Pictures

Central Database Value

Field History

Flags:

EEA ☒ | SH ☐ | E ☐ | A ☐



Software Benefits: Repair Items and Costs

M-0014001: New SI&A Pontis Cond Forms **Mont Co Forms** Rpt. Secs. Old SI&A Montgomery County Bridges Main Men

Description Summary Coating Rating Guardrail Reg. Inspection Notes Load Ratings Item 113 Maintenance Comp. Summary Table

Item Description	Item Code	Std. Unit Cost	Priority	Quantity	Estimated Cost	Manual Unit Cost	Ma Tot
1) Install structural bridge rail that meets current Pictures 4	D6 Calc.	\$100 L.F.	2	81	Unit Cost = \$100 Total = \$8100		
2) Install additional posts along the approach Pictures 5 6	 Calc.		2	L.S.	--	\$1,800	\$1,800
3) Replace two (2) posts along the Southwest Pictures 6 8	 Calc.		2	L.S.	--	\$180	\$180
4) Replace the damaged sections of the Northwest Pictures 11	R8 Calc.	\$50 L.F.	3	30	Unit Cost = \$50 Total = \$1500		
5) Install traffic barrier end treatments at the ends Pictures 12	R10 Calc.	\$1,900 Ea.	2	2	Unit Cost = \$1900 Total = \$3800		
6) Remove the tree at the end of the Northeast Approach	 Calc.		2	L.S.	--	\$500	\$500

Done

Item Code

- R1 - Remove and Replace Concrete Curb
- R2 - Remove and Replace Conc. Sidewalk
- R3 - Repair Asphalt Wearing Surface
- R4 - Seal Crack in Asphalt Wearing Surf.
- R5 - Grind and Resurface Asphalt...
... Wearing Surf.
- R6 - Regrade Approach
- R7 - Repair/Connect W-beam Traffic Bar.
- R8 - Install W-beam/Traffic Barrier
- R9 - Instl. W-beam Traf. Barrier Transtr
- R10 - Install W-beam End Treatment
- R11 - Repair Collision Damage to Solid...
... Protective Barrier
- R12 - Install Object Marker
- R13 - Instl./Reloc Adv Post/Warning Sign
- R14 - Install Posting/Warning Sign
- R14 - Install/Repair Sign
- R16 - Repair Chain Link Fence/Railing
- R17 - Install New Chain Link Fence
- D1 - Patch Spalled Concrete (Topside)
- D2 - Patch Spalled Concrete (Underside)
- D3 - Patch Spalled Parapet
- D4 - Seal Crack in Deck
- D5 - Seal Crack in Parapet
- D6 - Repair / Replace Metal Railing
- D7 - Replace Comprsn. Seal/Joint Matrl.
- D8 - Replace Deck Joint
- D9 - Repair Steel Deck Panel
- D10 - Replace/Repair Timber Planking

Trusted sites | Protected Mode: Off 100%

Integrated Calculations

BridgeInspect Collector - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridges/inspection.aspx?id=188016&type=1

BridgeInspect Collector

194.21-02188 BEBL

Primary Forms | Aux. Forms | SI&A | FC/UW/Spec. | P.o.A. | Scour | Load Rating | Rpt. Info | La Porte | Main Menu

Inspectors/Date | Rot. Sections | Pictures | Mult. Pictures | Forms | Notes | Deficiency | **NBI Calcs** | Error Check

NBI Field	Calculated Value
Item 67 - Structural Evaluation	5
Item 68 - Deck Geometry	9
Item 69 - Underclearances	3

NOTE: Fields on this page are linked to the report.

SUFFICIENCY RATING = 76.10

STRUCTURAL & FUNCTIONAL CLASSIFICATION: STRUCTURALLY DEFICIENT

[To Re-calculate Ratings Click Here](#)

FIELDS USED TO CALCULATE SUFFICIENCY RATING			
IDENTIFICATION		CONDITION	
8B. BRIDGE NUMBER:	02188	58. DECK:	4
		59. SUPERSTRUCTURE:	5
STRUCTURE DATA		60. SUBSTRUCTURE:	5
43A. MAIN STRUCTURE TYPE:	C-SB	62. CULVERT/RET WALL:	N
AGE AND SERVICE		LOAD RATING & POSTING	
28A. LANES ON STRUCTURE:	03	66A. INVENTORY RATING:	238
29A. ADT-OVER:	40985		
19. DETOUR LENGTH:	1	APPRAISAL	
		67. STRUCTURAL:	5
GEOMETRIC DATA		68. GEOMETRY:	9
51. BRIDGE RDWY. WIDTH:	62.5	69. UNDERCLEARANCE:	3
52. APPR. RDWY. WIDTH:	63	71. WATERWAY ADEQUACY:	6
53. VERT. CLEAR./DECK:	99 ft. 99 in.	72. ROADWAY ALIGNMENT:	9

Done

Internet 100%

BridgeInspect Collector

inspect^tech

Report Output focused on User Type

180-11-08056

Primary Forms | Aux. Forms | SI&A | FC/UW/Spec. | P.o.A. | Scour | Load Rating | **Rpt. Info**

Inspectors/Date | **Rpt. Sections** | Pictures | Asset Files | Forms | Notes | Deficiency | NBI Calcs | NBI String | Error Check

Group: All

The reports included in the selected group.

Save | Remove | Add Sections/PDF Attachments | View PDF

	Section Name	Print	Include in Table of Contents	Insert Cover Page Before Section
<input type="checkbox"/>	Toll Road	View <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	2 Table of Contents	View <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	3 SI&A Full	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	4 SI&A Short	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	5 General Inventory	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	6 Approach	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	7 Deck	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	8 Superstructure	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	9 Paint Condition	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	10 Collision Damage	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	11 Substructure	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	12 Channel & Channel Protection	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	13 Culvert and Underfill	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	14 Foundation Data	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	15 Pictures	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	16 Estimated Remaining Life	View <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Simple Report Generation

Mn/DOT Structure Inventory Report

Bridge ID: 5900

TH 43 OVER MISS RVR, RR, STREETS

Date: 1/4/2011

GENERAL		ROADWAY		INSPECTION	
Agency Br. No.	Crew	Bridge Math ID		Deficient Status	0
District	06 Maint	Roadway OIU Key	1 (Route carried 'on' the structure)	Sufficiency Rating	
County	085 (Winona)	Route Svs/Nbr	03 (MINTH) 43	Last Inspection	5/14/2009 12:00:00 AM
City	0065 (ALEXANDRIA)	Roadway Name or Description		Inspection	12
Township				Inspector Name	
Location	2.8 MI N OF JCT TH 61	Roadway Function	1 (MAINLINE)	Structure	A (Open)
Sect. Two..		Roadway Type	2 (2-way traffic)	NBI CONDITION RATINGS	
Latitude	44.057500	Control Section (TH Only)		Deck	% Used: 6 (Satisfactory Condition)
Longitude	-91.639721	Ref. Point (TH Only)		Superstructure	5 (Fair Condition)
Custodian	02 (County Highway Agency)	Date Opened to Traffic		Substructure	6 (Satisfactory Condition)
Owner	02 (County Highway Agency)	Detour Length	64.9982	Channel	8 (Banks are protected)
Inspection By	21 (DISTRICT 6)	Lanes	ON 2 UNDER 6	Culvert	N (Not Applicable)
BMJ Agreement		ADT (YEAR)	11900 (2004)	NBI APPRAISAL RATINGS	
Year Built	1941	HCAAT	4	Structure	4 (Meets minimum tolerable limits)
Year Fed Rehab		Functional Class	14 (Urban)	Deck Geomstrv	9 (Superior to present desirable criteria)
Year Remodeled				Underclearance	4 (Meets minimum tolerable limits)
Temp	Temp OK/Reduced Load (S)			Water Adequacy	8 (Bridge Above Approaches)
Plan Avail.	1 (CENTRAL)	RDWY DIMENSIONS			
		If Divided	NB-EB SB-WB	SAFETY FEATURES	
		Roadway Width	n.	Bridge Rating	1 (MEETS STANDARDS)
		Vertical	n.	GR Transition	0 (SUBSTANDARD)
		Max. Vert. Clear.	n.	Abor. Guardrail	0 (SUBSTANDARD)
		Horizontal	n.	GR Termini	N (NOT REQUIRED)
		Lateral Clear.	n.	IN DEPTH INSP.	
		Appr. Surface	31 n.	Fract. Critical	Date: 6/23/06 12:00:00 AM Y24
		Roadway Width	31 n.	Underwater	6/23/06 12:00:00 AM Y50
		Median Width	n.	Pinned Asbly.	
				Soc. Fast.	7/13/07 12:00:00 AM Y45
		WATERWAY			
		Drainage Area			
		Waterway Opening			
		Navigation Control			
		Pier Protection			
		Nav. Vert./Horz.			
		Nav. Vert. Lift			
		MN Scour Code			
		Scour Evaluation			
		CAPACITY RATINGS			
		Design Load			
		Operation Rating			
		Inventory Rating			
		Postino V/FH			
		Rating Date			
		Mn/DOT Permit Codes			
		A 1 B 1 C 1			

1/4/2011

Mn/DOT BRIDGE INSPECTION REPORT

Crew Number:

Inspector: districts

BRIDGE 5900 TH 43 OVER MISS RVR, RR, STREETS

INSP. DATE: 12/21/2010

County: Winona Location: 2.8 MI N OF JCT TH 61 Length: 2289.5
 City: Route: 03 Ref. Pt.: 044+00.592 Deck Width: 34.4
 Township: Control Section: 03 Maint. Area: 02 Rowy. Area/ Pct. Unsd: 6591/
 Township: Section: 22 Range: 107 Local Agency Bridge Nbr.: Paint Area/ Pct. Unsd: 2215, 89439/30

Span Type: 10

Culvert:

NBI Deck: 6 Super: 5 Sub: 6 Chan: 8 Culv: N
 Open, Posted, Closed: A

Appraisal Ratings - Approach: Waterway: 8 MN Scour Code: 3 Def. Stat: 0 Suff. Rate:
 Required Bridge Signs - Load Posting: 0 Traffic: 0
 Horizontal: 0 Vertical: 0

Structure Unit:

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
022	Low Slump OIL (Concrete Deck with Uncoated Rebar)	2	12/21/2010	7314	7314	0	0	0	0
			5/14/2009	7314	7314	0	0	0	0
026	Top of Concrete Deck (No Overlay - Epoxy Rebar)	2	12/21/2010	7314	0	7314	0	0	0
			5/14/2009	7314	0	7314	0	0	0
Span 15 - has 4 small spalled areas ranging in size from 4" X 6" to 1' X 1'.									
Span 16 - has a small 1' X 1' spalled area in the north bound lane at the south end near the center line.									
Span 17 - has 2 small 5' X 4" spalled areas along the assembly joint.									
Span 19 - has 4 small 4' X 4" spalled areas along the assembly joint.									
Span 21 - has a several small spalls in the north bound lane adjacent to the expansion joint. There is a patched area in the south bound lane near mid span.									
Span 24 - has a 3 patches and a 6" wide open spall along the north bound lane.									
107	Painted Steel Girder or Beam	2	12/21/2010	239	99	56	53	30	0
			5/14/2009	239	99	56	53	30	0
The paint system is mostly sound with some scattered areas of active corrosion and minor loss of section.									
Check the attached snooper inspection report for further details.									
109	Prestressed Concrete Girder or Beam	2	12/21/2010	128	127	1	0	0	0
			5/14/2009	128	127	1	0	0	0
There is one prestressed concrete girder located on the east side of the bridge in spans 3 thru 14. In span 11, there are small chips along the end of the girder over pier 11.									
Check the attached snooper inspection report for further details.									
110	Reinforced Concrete Girder or Beam	2	12/21/2010	512	434	73	5	0	0
			5/14/2009	512	434	73	5	0	0

These concrete cast in place T-girders are located in spans 3 thru 14. There are scattered girders with vertical or random cracks and small patches.

Span 13 - the west fascia girder has a small area of spalling near the mid span.

Report Generation

Indiana Department of Transportation Bridge Inspection Photos

NBI Number: 35750
Facility Carried: I-55 SBL

Bridge Number: I65-85-05527 BSBL
Feature(s) Intersected: SUGAR CREEK



Photo 1

IMG_8411 East view west, drift on pier 4, concrete deterioration...JPG



Photo 2

IMG_8419 North view south. Surface appears to have lost its abrasion...JPG

THINK SAFETY FIRST

BRIDGE SUFFICIENCY RATING

NBI Number: 35750
Facility Carried: I-55 SBL

Bridge Number: I65-85-05527 BSBL
Feature(s) Intersected: SUGAR CREEK

1) STRUCTURAL ADEQUACY AND SAFETY (MAX = 55%)

STRUCTURAL RATING REDUCTION	C=	0.00
ADJUSTED INVENTORY TONNAGE (AIT)	AIT=	36.00
I =	I=	0.00
S1=		55.00

2) SERVICEABILITY AND FUNCTIONAL OBSOLESCENCE (MAX=30%)

SERVICEABILITY RATING REDUCTION (MAX = 13%)

ITEM NO. 58 DECK CONDITION	A=	0.00
ITEM NO. 67 STRUCTURAL EVALUATION	B=	0.00
ITEM NO. 68 DECK GEOMETRY	C=	0.00
ITEM NO. 69 UNDERCLEARANCES	D=	0.00
ITEM NO. 71 WATERWAY ADEQUACY	E=	0.00
ITEM NO. 72 APPROACH ROAD ALIGNMENT	F=	0.00
J = (A+B+C+D+E+F)	J=	0.00

VERT. CLEARANCE RATING REDUCTIONS (MAX 2%)

I=	0.00
S2=	30.00

ROADWAY WIDTH RATING REDUCTIONS (MAX=15%)

X=	10,187.00	Y=	20.15
1) APPLY TO ALL BRIDGES EXCEPT CULVERTS			
IF (No. 51 + 2%) < No. 32 THEN, G=5%			
G=	0.00		
2) APPLY TO ONE LANE BRIDGES ONLY			
H2=	0.00		
3 & 4) APPLY TO BRIDGES WITH 2 OR MORE LANES			
H3=	0.00		
H4=	0.00		

3) ESSENTIALITY FOR PUBLIC USE (MAX 15%)

K = (S1 + S2)/85	K=	1.00
A = (ADT x Detour Length x 15) / (200,000 x K)	A=	1.53
B = 2% if No. 100 > 0, else 0% if No. 100 = 0	B=	2.00
S3 = 15 * (A + B)	S3=	11.47

4) SPECIAL REDUCTIONS (USED ONLY WHEN S1 + S2 + S3 >= 50) (MAX 13%)

A = (No. 19)/4 x (\$205 x 10^-8)	A=	0.00
B = 0% to 5%	B=	0.00
NO. 35 SUM OF TRAFFIC SAFETY FEATURES =	C=	4.00
C =	C=	0.00
S4=		0.00

SUFFICIENCY RATING = (S1 + S2 + S3 - S4) = 96.47

STRUCT. & FUNC. CLASS. = OK

THINK SAFETY FIRST

Other Report Types

- Critical Finding
- Fracture Critical
- Pinned Assembly
- Special
- Damage
- Other
- Underwater
- Scour



Pinned Assembly, Special Inspections, Other Reports



Pinned Assembly Bridge Inspection Report



Bridge No.:	Pinned Assembly Inspection Date:
Bridge Owner:	Pinned Assembly Inspection Frequency:
Location:	Pinned Assembly Inspection Component(s):
Inspected By:	
Equipment Used:	

Inspection Procedures:

Findings:

Recommendations:



Special Bridge Inspection Report



Bridge No.:	Special Inspection Date:
Bridge Owner:	Special Inspection Frequency:
Location:	Special Inspection Component(s):
Inspected By:	
Equipment Used:	

Inspection Procedures:

Findings:

Recommendations:

Detailed Plans of Action

BridgeInspect Collector - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridges/inspection.aspx?id=188016&type=1

BridgeInspect Collector

194-21-02188 BEBL

Primary Forms | Aux. Forms | SI&A | FC/UW/Spec. | P.o.A. | Scour | Load Rating | Rpt. Info | La Porte | Main Menu

Routine P.o.A. | Special Id. Items | 92A. Frac. Crit. P.o.A. | 92B. Underwater P.o.A. | 92C. Special P.o.A. | Scour P.o.A.

Routine Plan of Action

Create New Action Item | Show Completed Items | Filter by status:

In Progress Items:

Completed: ☐ Delete

Title:

Description: Inspectors are required to maintain a complete file on the bridge, for the life of the bridge. All Plans, photos, records, and Reports are to be kept either in a paper format, or an electronic format that can be accessed if needed.

The Railroad Name and Ownership Information should be obtained and

Notes:

Status: To Do

Frequency: Months

Freq. Description: FILES

Date Due:

Date Completed:

Previously Completed:

Completed: ☐ Delete

Title:

Description: Routine Inspection - Every 24 Months or less

1. Review all data and Inspection Reports and Plans prior to inspection to determine any special needs.

2. A complete "walk-around inspection" is required, along with a binocular scan of superstructure elements. Care should be taken when walking and working near the rail line. The Railroad should be

Notes:

Status: To Do

Frequency: 24 Months

Freq. Description:

Date Due:

inspect^tech

https://myweb.in.gov/INDOT/bridges/toplinkbottom.aspx?id=188016&type=1&ft_id=6

Internet 100%

Risk-Based Management

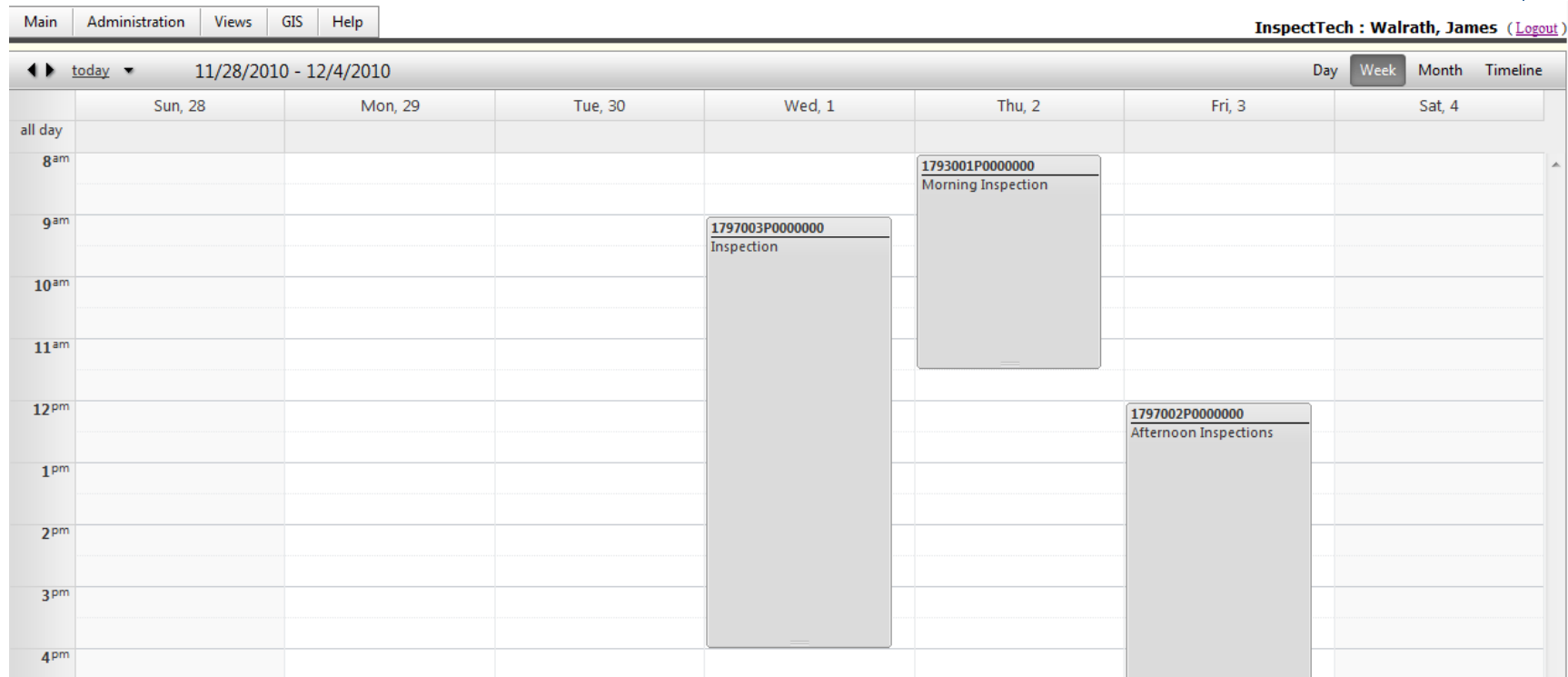


- Identify needs on multiple criteria
- Organize repairs based on vulnerability and cost

Recommendation (See Footnote 1)		Risk Assessment		Estimated Cost (\$)	
Description:				Repair/Rehab	Replacement
Remove old piles in channel under bridge and on banks to prevent debris buildup. Backhoe, Operator & Helper: 8 Hours at \$120/hour = \$960, Adjustment for Location: None		Hazard Severity: 2 - Critical		960	
		Consequence Probability: B - Likely to occur			
		Calculate RAC			
		Urgency Index: 3 Urgent Item:			
a. Construction Estimate:	960	f. Subtotal:	960		
b. Construction Contingency:	0	g. <input type="checkbox"/> G.A.S.:	0		
c. Planning/Design/Const. Mgmt.: (see Footnote 2)	0	h. Project Total for Year of Estimate 2007:	960		
d. Planning/Design: (See Footnote 3)	0	i. Escalation to Current Year:	960		
e. Const. Mgmt.: (See Footnote 3)	0	j. Escalation to Future Year:	960		
<input type="button" value="Calculate Totals"/>					
		Recommendation Order: Maint/Repair/Rehab			
<input type="button" value="Select New Picture"/>					

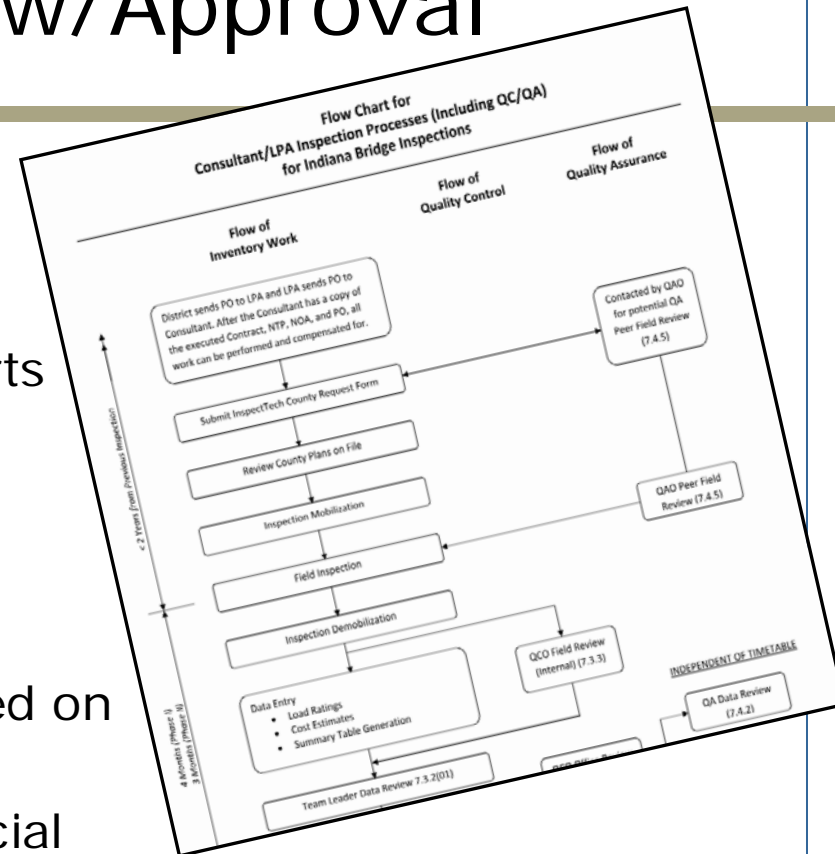
There are no pictures linked to this record.

Visually Show Scheduling and Inspection



Report Review/Approval

- Reports have full lifecycle and accountability
- Tabs clearly show status of reports
- Clearly documented who did the inspection
- What changes were made
- Who reviewed and when
- Ability to set approval chain based on bridge
- Information not entered into official database until it is approved
- Auto-flag certain bridges for review



Manager Software System

Management Software

All bridge data in a single location with easy to use and powerful modules for past, current, and future info/tasks.

Prioritization

Scheduling

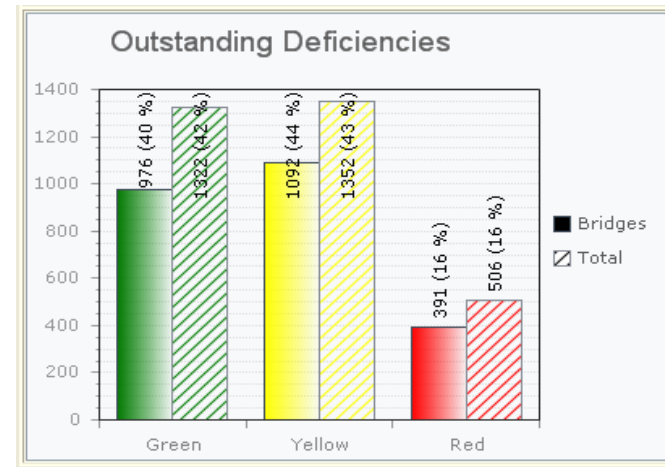
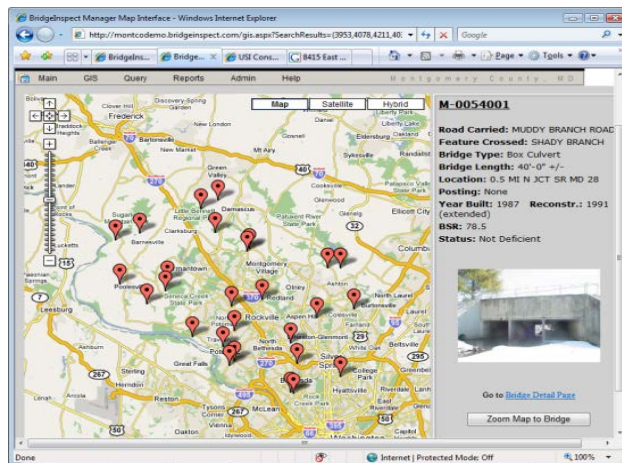
Pictures/Sketches

GIS

Reporting/Searching

Instant Access

Cost Estimates



Features of Management System

- Full Search Capabilities
- Track/Highlight Changes
- Accountability of all data entered/changed
- Instant Data Access: All digitized documents can be stored and retrieved, such as
 - Pictures
 - Diagrams
 - Memos
- Standardized Reports from all inspection/inventory data
 - Maintenance Needs / Priorities
 - Scheduling
- Interactive Interfaces
- Triggers/Alerts
- Consultant assignment
- Sufficiency Rating calculators/reporting
- Do not lose critical knowledge when people retire

Bridge Detail Page

- Contains links to all current and past information on the bridge
 - Reports, Pictures, Sketches, Maintenance Items
 - Contracts, Load Rating, Letters, etc.
- Link to Bridge Location
- Bridge Notes
- Upcoming inspection dates
- Functionality integrated from other programs
- Users can control default view

Bridge Detail Page

BridgeInspect Collector - Windows Internet Explorer

http://mindot.bridgespect.com/bridgedetail.aspx?type=0&as_id=103719

File Edit View Favorites Tools Help

☆ Favorites excel bridge deterior... http://onlinepubs.trb... http://onlinepubs.trb... BridgeInspect Coll... X

Minnesota DOT
Bridge and Structure Inspection System
inspect^tech

Messages: 0 new (view)

Quick Select: [View asset group](#)

Main Administration Views GIS Help


InspectTech : Administrator, InspectTech (Logout)

District 06: 5900

Parent Asset: District 06
Asset Name: 5900
Asset Code: 5900
Asset Type: Bridge
NBI 7: Facility Carried by Structure: TH 43
NBI 6A: Feature Intersected: Narrative: MISS RVR, RR, STREETS
NBI 29: Average Daily Traffic (ADT): 11900
NBI 64: Operating Rating: Metric Tons: 37
NBI 66: Inventory Rating: Metric Tons: 19
NBI 41: Structure Open, Posted, or Closed to Traffic: A - Open

Quick Links:

- [View Structure on Map](#)
- [Edit Central Database Values](#)
- [View Central Database Values Report](#)
- [View Audit History Report](#)
- [Manage Security for this Asset](#)



Inspection Reports

Inspection Date	Inspection Type	Inspectors	Description	View Report	View PDF
06/21/2010	Routine and Full FC	Zink, Jennifer	In progress		
05/14/2009		Administrator, InspectTech	Approved		
10/17/2008			Underwater Inspection Report		
07/31/2008					
07/23/2008			As Built Repair Summary		
06/23/2008			Gusset Repair		
06/05/2008			Fracture Critical Inspection Report		
06/04/2008			Defining Critical Inspection Summary		

Internet 105%

Bridge Detail Page

BridgeInspect Collector - Windows Internet Explorer

http://mndot.bridgespect.com/bridgedetail.aspx?type=08&id=103719

File Edit View Favorites Tools Help

Filter Files/Pictures

File Date: From: To: File Description: Filter







Sketches

No Sketches found.

Photos

There are 610 photos linked to this asset. Files 1 through 48 are displayed. If you need to see different files, use the filter or page the the results with the 'Next' and 'Previous' buttons.

1 2 3 4 5 6 7 8 9 10 11 12 13 Next

 <p>File: 6874 Span #19 WT L11 (floorbeam end).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>	 <p>File: 6841 Span #19 WT L19 (interior gusset - roadway face).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>	 <p>File: 6842 Span #19 WT L19 (interior gusset - roadway face).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>
 <p>File: 6843 Span #19 WT L19-L19 at L19 (interior channel).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>	 <p>File: 6844 Span #19 WT L19-L18 (typical corrosion).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>	 <p>File: 6845 Span #19 WT L19-L18 (typical pitting & corrosion).JPG Date: 6-4-2008 Originally attached via the manager software Description: Edit Details Delete</p>

Internet 105%

Search pictures and drawings by description and date

Manage Pictures/Files

Attach Files/Picture **Attach Multiple Files/Pictures**

Attach Files/Picture

File To Attach:

Type:

File Date (i.e. Date Picture Taken):

Description:




Filter Files/Pictures

File Date: From:

To:










File Description:

Photos



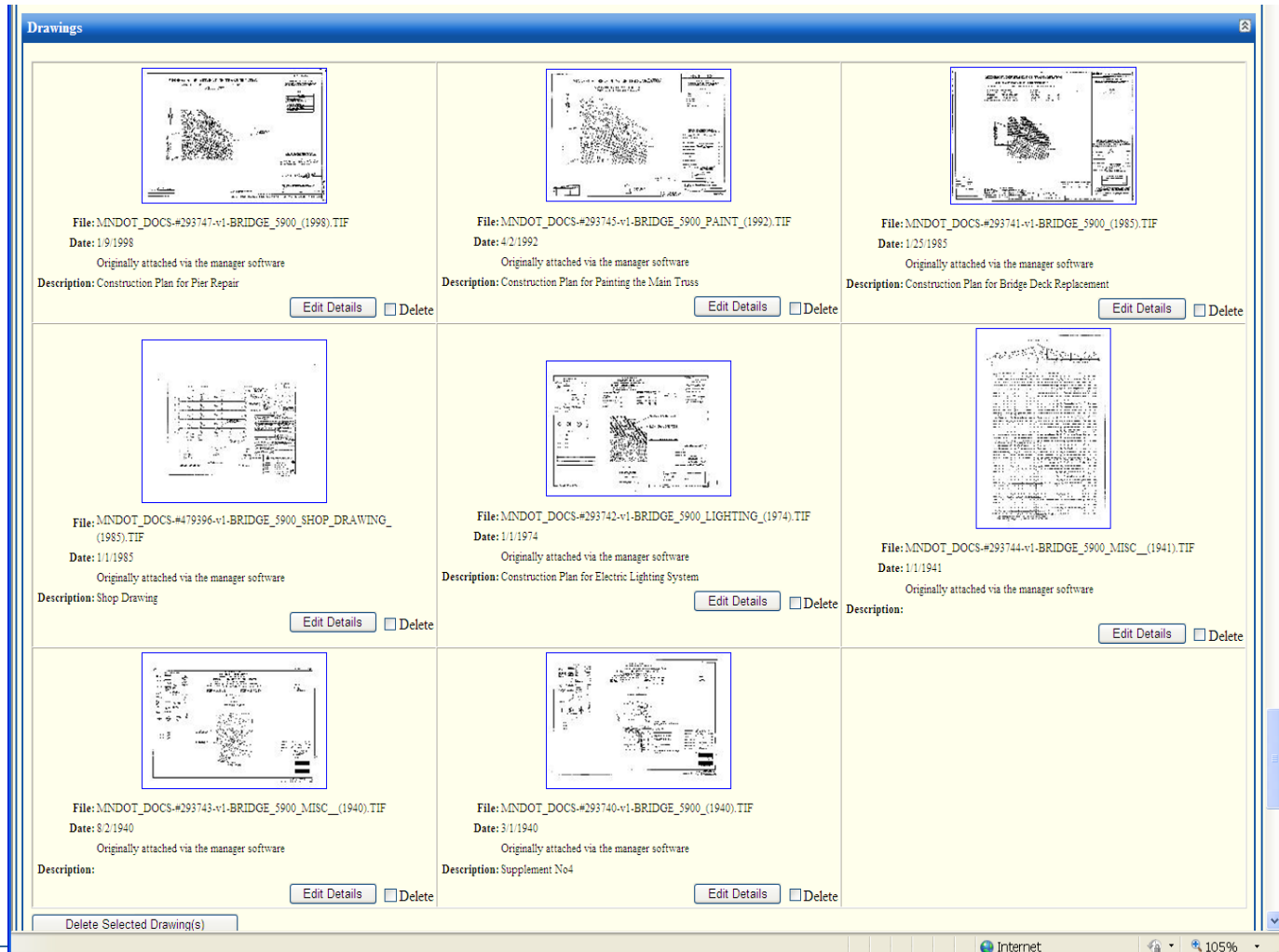
Internet 100%

Compare Pictures Across Time for visually seeing changes

 <p>File: IMG_8407 West view east, northwest wingwall, horizontal crack.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8407 West view east, northwest wingwall, horizontal crack.JPG</p> <p>Edit Details</p>	 <p>File: IMG_8406 Northwest view southeast, west side, debris along pier 4, north side.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8406 Northwest view southeast, west side, debris along pier 4, north side.JPG</p> <p>Edit Details</p>	 <p>File: IMG_8405 Southeast view northwest, northwest corner, sloped wall settlement, rust on bearings.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8405 Southeast view northwest, northwest corner, sloped wall settlement, rust on bearings.JPG</p> <p>Edit Details</p>
 <p>File: IMG_8404 South view north, hole in sloped wall, near beam 7, northeast corner.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8404 South view north, hole in sloped wall, near beam 7, northeast corner.JPG</p> <p>Edit Details</p>	 <p>File: IMG_8403 North view southeast, parapet wall west, horizontal cracks in coping, rust on flange, span E.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8403 North view southeast, parapet wall west, horizontal cracks in coping, rust on flange, span ...</p> <p>Edit Details</p>	 <p>File: IMG_8402 East view west, bent 6, expansion joint.JPG Date: 6/1/2009 Originally attached as part of 5/21/2009 report Description: IMG_8402 East view west, bent 6, expansion joint.JPG</p> <p>Edit Details</p>
		

Internet 100%

Access to any electronic file



Access to any electronic file

The screenshot displays the BridgeInspect Collector web application in a Windows Internet Explorer browser window. The address bar shows the URL: <http://mndot.bridgespect.com/bridgedetail.aspx?type=08&id=103719>. The browser's Favorites bar includes links to "excel bridge deterior...", "http://onlinepubs.trb...", and "http://onlinepubs.trb...". The application interface features a "Delete Selected Drawing(s)" button at the top. Below this, the "Historical Report" section contains a grid of nine report entries, each with a file name, date, description, and "Edit Details" and "Delete" buttons. The reports include:

- File Name: [MNDOT_DOCS#764864.v1-BRIDGE 390 UNDERWATER INSPECTION REPORT \(2008\).PDF](#), Date: 10/17/2008, Description: Underwater Inspection Report
- File Name: [MNDOT_DOCS#631716.v1-BRIDGE 1900 \(2008\).PDF](#), Date: 7/31/2008, Description:
- File Name: [MNDOT_DOCS#635581.v1-BRIDGE 5900 AL-BUILT REPAIR SUMMARY \(2008\).PDF](#), Date: 7/23/2008, Description: As Built Repair Summary
- File Name: [MNDOT_DOCS#631715.v1-BRIDGE 5900 GUSSET REPAIR \(2008\).PDF](#), Date: 6/25/2008, Description: Gusset Repair
- File Name: [MNDOT_DOCS#711172.v1-BRIDGE 1900 FRACTURE CRITICAL INSPECTION REPORT \(2008\) REVIEW-DX REPLY.PDF.PDF](#), Date: 6/5/2008, Description: Fracture Critical Inspection Report
- File Name: [MNDOT_DOCS#713831.v1-BRIDGE 1900 FRACTURE CRITICAL INSPECTION REPORT \(2008\).PDF](#), Date: 6/5/2008, Description: Fracture Critical Inspection Report
- File Name: [5900 open 3113.pdf](#), Date: 6/2/2008, Description: No Date Sketch
- File Name: [MNDOT_DOCS#612028.v1-BRIDGE 1900 FRACTURE CRITICAL INSPECTION REPORT ACKNOWLEDGMENT \(2007\).PDF](#), Date: 1/1/2007, Description: Fracture Critical Inspection Report Acknowledgment
- File Name: [MNDOT_DOCS#708137.v1-BRIDGE 1900 UNDERWATER INSPECTION REPORT \(2008\).PDF](#), Date: 10/24/2008, Description: Underwater Inspection Report

Below the "Historical Report" section is the "Rating Document" section, which contains three entries:

- File Name: [MNDOT_DOCS#612997.v1-BRIDGE 1900 RATING \(1986\).PDF](#), Date: 4/18/1986, Description: Rating
- File Name: [MNDOT_DOCS#602239.v1-BRIDGE 1900 RATING \(1986\).PDF](#), Date: 4/18/1986, Description: Bridge Rating
- File Name: [MNDOT_DOCS#612991.v1-BRIDGE 1900 RATING \(1976\).PDF](#), Date: 3/18/1976, Description: Rating






At the bottom, the "Maps" section indicates "No Maps found." The browser's status bar at the bottom shows "Internet" and a zoom level of "105%".

Trending Module

- Much cheaper and safer to fix problems when they are just starting
- Software's trending tools allow county/city to quickly find new problems early on
- Able to find changes on NBI and Element Level data

Condition Change Report
Items - 58, 59, 60, 61, 62, 71, and 72

Sort by-> Field: Bridge Number ▼ Order: Ascending ▼ Go

<u>Bridge #</u>	<u>Item</u>	<u>Current</u>	<u>Last</u>	<u>Trend</u>	<u>Last Insp.</u>	<u>Insp. Report</u>
BC1101001	59	6	8	-2	1/11/2006	
BC1110011	60	6	7	-1	11/17/2005	
BC1113001	58	7	6	+1	12/7/2005	
BC1115001	59	6	7	-1	11/11/2005	
BC1118001	59	6	7	-1	11/29/2005	

Needs Prioritization

- Multiple programs for bridge population
 - Painting
 - Capital Improvement (Replacement/Rehab)
 - Maintenance Crews
- Priority within the program
- Utilization of multiple objectives
- Special 'Local' Factors
- Formulas are all fairly basic, easy to understand



System Reports

- Upcoming Inspections (by type/district)
- Overdue Inspections (by type/district)
- High Priority Deficiencies
- Reports Awaiting Approval
- Quarterly Status Summary
 - Status of each district
 - Compliance details of counties

Searching/Query

- Search across any field within the inspection reports or inventory information
- Fields automatically linked from inspection forms to search pages
- Boolean logic can create simple or very complex nested queries
- Show on screen in table
- Export to Excel
- Plot results onto interactive map
- Very easy to do, no additional programs required

Mapping of Search Results



Messages: 0 new ([view](#))

Quick Select: [View asset group](#)

InspectTech : Zink, Jennifer ([Logout](#))

Count: 133

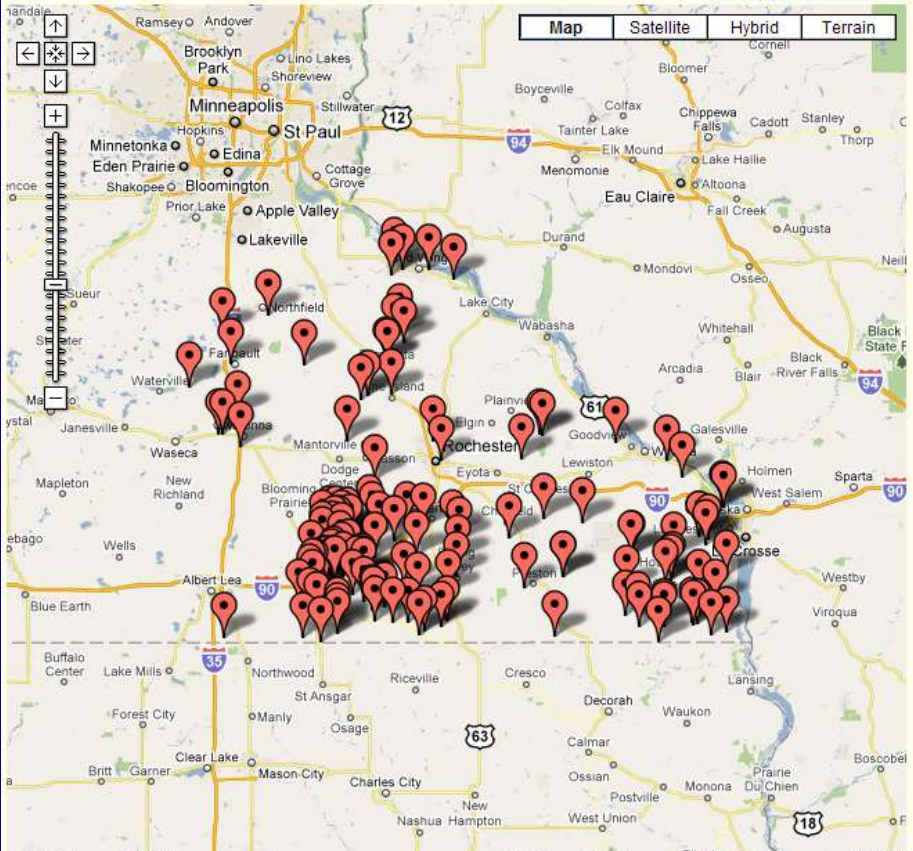
[Print](#) | [Toggle Controls](#)

Map

Satellite

Hybrid

Terrain



Information

Street View

L0572
Parent Asset: District 06
Asset Name: L0572
Asset Code: L0572
Asset Type: Bridge
NBI 7: Facility Carried by Structure: TWP 75
NBI 6A: Feature Intersected: Narrative: STREAM
NBI 29: Average Daily Traffic (ADT): 41
NBI 64: Operating Rating: Metric Tons: 75.9492
NBI 66: Inventory Rating: Metric Tons: 50.3977
NBI 41: Structure Open, Posted, or Closed to Traffic: A - Open

[Go to Report Detail Page](#)

Zoom Map to Bridge

Satellite and Interactive Street Views



Messages: 0 new ([view](#))

Quick Select:

[View asset group](#)

MainAdministrationViewsGISHelp

InspectTech : Zink, Jennifer ([Logout](#))

[Print](#) [Toggle Controls](#)

MapSatelliteHybridTerrain



InformationStreet View

5900



[Google](#) © 2010 Google [Report a problem](#)

Toggle Street Overlay

Toggle Street View Marker

Set Selected Marker To Street View Marker

Reports in Excel

results[1].csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11 General \$ % .00 .00 Conditional Formatting Format as Table Cell Insert Delete Format AutoSum Fill Clear Sort & Find & Filter Select

	A	B	C	D	E	F	G	H	I
	Parent Asset	Asset Name	District Code	NBI Number	Feature Intersected	Facility Carried	58 - Deck (Rating)	Substructure	Superstructure
2	Crawfordsville	(136)34-06-03291	1	26890	EMILY GARDNER DITCH	US 136	4	4	4
3	Seymour	(1X)1-24-06625 B	5	516	WHITEWATER RIVER	SR 1X	1	4	3
4	La Porte	(25)24-09-04178 A	4	6000	EEL RIVER	SR 25	4	3	4
5	Fort Wayne	005-57-02480	2	1600	SR 5	CONRAIL	4	4	4
6	La Porte	008-46-03214 A	4	2230	KANKAKEE RIVER	SR 8	4	4	4
7	La Porte	010-56-01454 C	4	2890	BEAVER LAKE DITCH	SR 10	4	4	4
8	Greenfield	019-80-04212	3	4990	MUD CREEK	SR 19	3	4	5
9	La Porte	023-71-04993 B	4	5830	ST. JOSEPH RIV & BLVD.	SR 23	4	4	6
10	La Porte	024-91-03731 B	4	5940	TIPPECANOE RIVER	US 24	4	4	4
11	La Porte	025-08-02218 A	4	6450	NSRR	SR 25	4	4	5
12	Crawfordsville	025-79-02004	1	6360	SR 25	CSX RR	3	4	3
13	La Porte	030-64-02026	4	8170	US 30	NSRR	4	4	6
14	Seymour	031-36-02028	5	9180	US 31	CSX RR	4	4	6
15	La Porte	035-46-05899 A	4	11390	KANKAKEE RIVER	US 35	3	3	3
16	Greenfield	036-68-03478	3	11810	LITTLE MUD CREEK	US 36	4	2	4
17	Crawfordsville	039-06-04115 B	1	13290	I-65	SR 39	4	4	5
18	La Porte	041-45-02039 A	4	15660	ABAN RR'S&(E/LBikeTrail)	US 41	4	4	4
19	La Porte	043-28-02507	4	15900	SR 43	INDIANA RR CO.	4	4	4
20	La Porte	053-45-02510	4	19510	SR 53	IHB RR	4	3	4
21	Crawfordsville	055-04-01567	1	19770	S FORK MONTGOMERY BRANCH	SR 55	2	4	2
22	Vincennes	058-77-06377	6	20790	MARSH CREEK	SR 58	4	4	3
23	Crawfordsville	163-83-01724	1	28410	HUMPHERY'S BRANCH	SR 163	4	4	4
24	Seymour	203-72-03078 A	5	28720	WOODS FORK CREEK	SR 203	4	4	5
25	Crawfordsville	236-61-04121 A	1	29810	S FORK LTL RACCOON CR	SR 236	4	4	5
26	Crawfordsville	246-60-07985	1	30395	WEST FORK FISH CREEK	SR 246	3	3	3
27	La Porte	312-45-05403 B	4	31320	INDIANA HARBOR CANAL	SR 312	3	2	3
28	Crawfordsville	341-23-04934 A	1	31720	I-74	SR 341	4	4	5
29	La Porte	912-45-02546 A	4	33029	CANAL[comma] RAMP[comma] 3 RR & RD.	SR 912	4	4	2
30	Greenfield	I465-149-02221 BNBL	3	50770	US 136 & ABANDONED RR	I-465 NBL	4	4	6
31	Greenfield	I465-150-04668 A	3	50840	I-465	10TH ST. WB RAMP	4	4	6
32	Greenfield	I70-73-04647 CERL	3	41990	I-465 - W LEG	I-70 FRI	4	4	6

Ready results(1) 100%

Query Results

- Queries can be saved for later use
- Organized by user and category
- Can be retrieved and edited
- Columns can be showed as values or definitions
- Additional non-queried columns can be easily added

Show Changes in an Easy to Understand Way for QA/QC User

	<u>Changed Object</u>	<u>Changed Date</u>	<u>Old Value</u>	<u>New Value</u>	<u>Asset Name</u>	
	Pigeon Screening Remarks	8/27/2009 3:53:20 PM		Because the bird screen had shifted bird were able to enter at the south end of the span where they nested. The area was cleaned and the screen was repaired.	Span 5158 OB (W)	1
	Pigeon Screening	8/27/2009 3:27:41 PM	4	6	Span 5158 OB (W)	1
	Pigeon Screening	8/27/2009 3:27:31 PM	7	4	Span 5158 OB (W)	1

Summary Reports

- Summarize tens of thousands of pages of information in an easy to understand format
- Utilize color to convey information and highlight those areas that have:
 - Changes
 - Concerns
 - Out of compliance
- Compare past/present for trending data
- Automatically generate

Detailed Summary Reports

Third Quarter (10/14/2010) NBIS Compliance - Status Report for INDOT Bridges



COMPLIANCE with National Bridge Inspection Standards (NBIS)

10/14/2010

NBIS Category	INDOT Districts								INDOT Overall
	1 Crawfordsville	2 Fort Wayne	3 Greenfield	4 La Porte	5 Seymour	6 Vincennes	6/TF Toll Facilities	7 Toll Road	
Regular Thermal Inspection (NBIS Item #90)	89.0%	96.4%	87.1%	85%	90.9%	90.4%	0%	96.0%	83.9%
Fracture Critical (NBIS Item #92A)	95.8%	0%	20%	100%	95.2%	71.4%	0%	28.6%	64.1%
Special Inspection Details (NBIS Item #92C)	95.1%	87.8%	97.1%	70.8%	96.1%	87.3%	0%	95.8%	89.3%
COMPLEX BRIDGES	0%	0%	0%	0%	0%	0%	0%	0%	0%
Underwater Bridge Inspections (NBIS Item #90B)	97.7%	95.2%	93.7%	93.2%	96%	93.2%	0%	100%	94.8%

Bridge Statistics

(data as of: 10/14/2010)

# Bridges		# Bridges	
5763	Bridges Inventory by INDOT	911	Bridges in the CRAWFORDSVILLE District
1495	Bridges that Carry Interstate Routes	750	Bridges in the FORT WAYNE District
1082	Bridges that Carry U.S. Routes	1138	Bridges in the GREENFIELD District
2441	Bridges that Carry S.R. Routes	820	Bridges in the LA PORTE District
335	Bridges that Carry County Roads Over Interstate Routes	949	Bridges in the SEYMOUR District
17	Bridges that Carry County Roads Over U.S. Routes	949	Bridges in the VINCENNES District
3	Bridges that Carry County Roads Over S.R. Routes	0	TOLL FACILITIES Bridges (Vincennes District Inspected)
0	Bridges that Carry County Roads Over Other	330	Bridges in the TOLL ROAD District
162	Bridges that Carry City Streets Over Interstate Routes	6	Border Bridges -- ILLINOIS (Land State)
21	Bridges that Carry City Streets Over U.S. Routes	8	Border Bridges -- KENTUCKY (Land State)
7	Bridges that Carry City Streets Over S.R. Routes	2	Border Bridges -- PRIVATELY OWNED (between Indiana & Illinois)
0	Bridges that Carry City Streets Over Other		
0	Bridges that Carry State Properties' Roads		
0	Bridges that Carry Railroads Over INDOT Routes		
0	Bridges that Carry ABANDONED Railroads Over INDOT Routes		
0	Bridges that Carry Pedestrian Walkway over INDOT Routes		
0	Bridges that Carry INDOT Routes, Adjacent to the Mainline Road		
0	Misc. -- Bridges over INDOT Routes		

NBIS Items 92A and 93A Non-Redundant --Fracture Critical Bridges

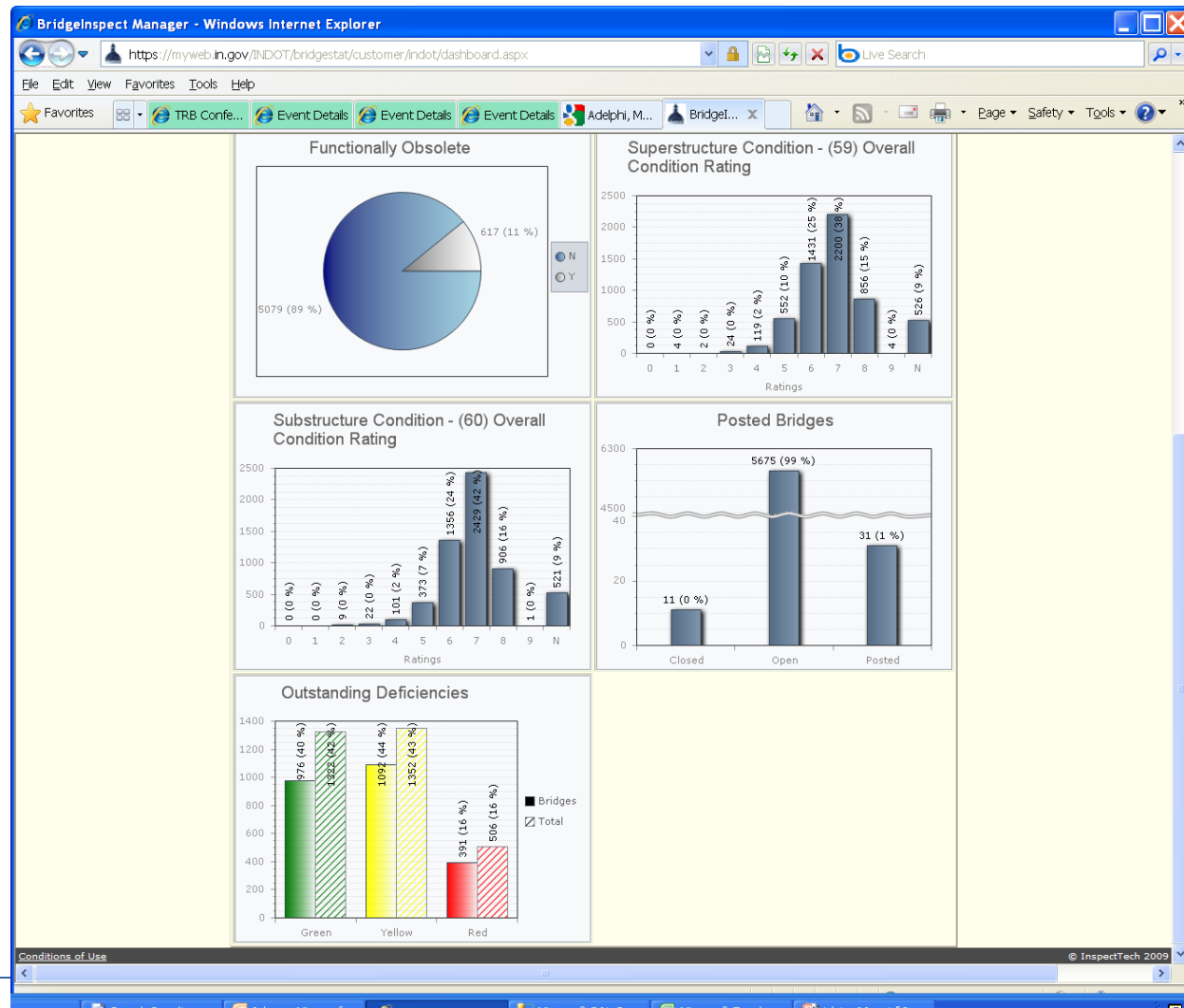
Totals for all three types of Non-redundant Bridges - (Bridges that carry 1. HIGHWAYS, 2. RAILROADS, 3. WALKWAYS)

DISTRICT	1 Crawfordsville	2 Fort Wayne	3 Greenfield	4 La Porte	5 Seymour	6 Vincennes	6/TF Toll Facility	7 Toll Road	INDOT Totals	Illinois Border	Kentucky Border	Private Border
# of Bridges Coded = Y (yes)	28	9	14	20	33	18	0	7	129	4	9	1
# of Bridges with Insp. Date	28	11	17	28	34	22	0	7	147	4	9	1
# of Bridges with Current Insp. Date	13	4	8	26	26	16	0	2	95	2	6	0
# of Bridges Insp. Date NOT Current	15	7	9	2	8	6	0	5	52	2	3	1
ates Current	46%	36%	47%	93%	76%	73%	0	29%	65%	50%	67%	0%
ates NOT Current	54%	64%	53%	7%	24%	27%	0	71%	35%	50%	33%	100%

Totals for only Non-redundant Bridges that carry HIGHWAYS, and reported to FHWA.

	1 Crawfordsville	2 Fort Wayne	3 Greenfield	4 La Porte	5 Seymour	6 Vincennes	6/TF Toll Facility	7 Toll Road	INDOT Totals	Illinois Border	Kentucky Border	Private Border
oded = Y (yes)	28	11	17	28	34	22	0	7	147	4	9	1
th Insp. Date	20	5	5	7	27	14	0	7	85	4	9	1
th Current Insp. Date	11	0	1	7	25	10	0	2	56	2	6	0
sp. Date NOT Current	9	5	4	0	2	4	0	5	29	2	3	1
ates Current	55%	0%	20%	100%	93%	71%	0	29%	66%	50%	67%	0%
ates NOT Current	45%	100%	80%	0%	7%	29%	0	71%	34%	50%	33%	100%

Executive Dashboard of Main Metrics



Organized Maintenance Needs

2		of the bridge.	1	R9	4	\$1500/EA.	\$6,000
Total Bridge Repair Cost:							\$18,000

	Description	Priority Code	Item Code	Quantity	Manual Unit Cost	Manual Total Cost
1	Install chain link fencing to prevent access to bridge parapets and to divert pedestrian pathway towards center of bridge.	1	R17	500	\$25/L.F.	\$12,500
2	Replace the damaged W-beam guardrail at the west approach.	1	R8	24	\$50/L.F.	\$1,200
Total Bridge Repair Cost:						\$13,700

	Description	Priority Code	Item Code	Quantity	Manual Unit Cost	Manual Total Cost
1	Repair approach settlement at bridge abutments.	1	R6	1	/L.S.	\$1,000
Total Bridge Repair Cost:						\$1,000

	Description	Priority Code	Item Code	Quantity	Manual Unit Cost	Manual Total Cost
1	Clean and paint all structural steel at and below the bridge deck of the Approach Bridge.	1	SUP9	1 LS	\$200,000	\$200,000
2	Clean and paint the steel truss members, aluminum fence railing, handrailing, etc. above and below the bridge deck of the Truss Bridge.	1	SUP9	1 LS	\$100,000	\$100,000
3	Replace the structural tube supporting the railing on the Approach Bridge.	1		130 LF	\$150	\$19,500
4	Replace corroded nuts and bolts of the double angle connection at the west end of the Approach Bridge.	1	R19	1 LS	\$2,000	\$2,000
5	Replace the scuppers on the Truss Bridge.	1		1 LS	\$10,000	\$10,000
Total Bridge Repair Cost:						\$331,500

	Description	Priority Code	Item Code	Quantity	Manual Unit Cost	Manual Total Cost
1	Some descriptions\fsld;fk	1	R10	2	100	\$200
Total Bridge Repair Cost:						\$200

Total Repair Costs for All Bridges: \$1,363,114						
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Summary

- Technology allows for easy ways to summarize and display information
- A variety of formats are available depending on the user type: inspector, manager, maintenance, non-bridge personnel, and the general public
- Same data can be used to generate vastly different reports to meet the needs of all stakeholders

InspectTech's Role

- We are a company focused on providing quality software solutions for structure inspection and management
 - Provide Inspection Software
 - Provide Management Software
 - System Design/Integration
 - Recommendations on Technology

InspectTech's Approach

- Have flexible core system and products
- Work with customers to tailor for specific needs
- Establish consistent, high quality, and reliable format for collection and management of data
- Allow for enhancements (pictures, sketches, interactive manuals...)
- Provide data for critical decisions in an efficient, easy to use manner
- Integrate with existing business processes
- Provide training and continual support

InspectTech's Approach

Proven Core System + Fully Customizable
=
**Reliable Solution that meets customer's
exact needs**



Wide Variety of Structures

- Bridges
- Culverts
- Over Head Sign Structures
- Tunnels
- Retaining Walls
- Sound Walls
- Guard Rail
- High Mast Lighting
- Antenna Towers
- *Many more...*



Questions

