



U.S. Fish and Wildlife Service: Risk-Based Inspection and Management Approach



Presented by:
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Jeremy Shaffer
Ben Witter

inspect **t**ech

Mission

“... conserve, protect, and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.”



Bridge Program

- 726 bridges @159 facilities
 - National Wildlife Refuges
 - National Fish Hatcheries
- 93,000,000 acres
- Service Bridge Inventory:
 - Any structure over 10' long
 - usually erected over water
 - carrying a roadway
 - wide enough to carry vehicles

A variety of stakeholders...



Program Challenges



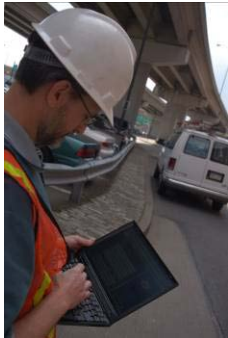
FWS Software System



FWS Inspection Software

Goal:

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



BridgInspect Collector - Microsoft Internet Explorer

File Edit View Favorites Tools Help

P-0192001: New SI&A Forms Points PIG MD Forms Report Forms Old SI&A Forms Main Menu

1-Ident 2-Class. & Trac. 3-Struct. Type & Mat. 4-Geometric 5-Geo. Cont. Reflow. Cost 6-Correl. Reflow. 7-Approval & News. Photo 8-Hist. & Inspec. 9-

SI&A Form 6 - Condition Ratings

(90) Inspection Date 4/15/2003
(91) Inspection Frequency 24
(92) Critical Feature Inspection N N N
(93) Critical Feature Inspection Date
(58) Deck 5
(59) Superstructure 9
(60) Substructure 9
(61) Channel and Channel Protection 8
(62) Culverts N
(332) Posting Signs N
(340) Inspection Classification W

Deck

5 - Fair Condition

N - Not Applicable
9 - Excellent Condition
8 - Very Good Condition
7 - Good Condition
6 - Satisfactory Condition
5 - Fair Condition
4 - Poor Condition
3 - Serious Condition
2 - Critical Condition
1 - Imminent Failure Condition
0 - Failed Condition

Page 6-4
Page 6-5

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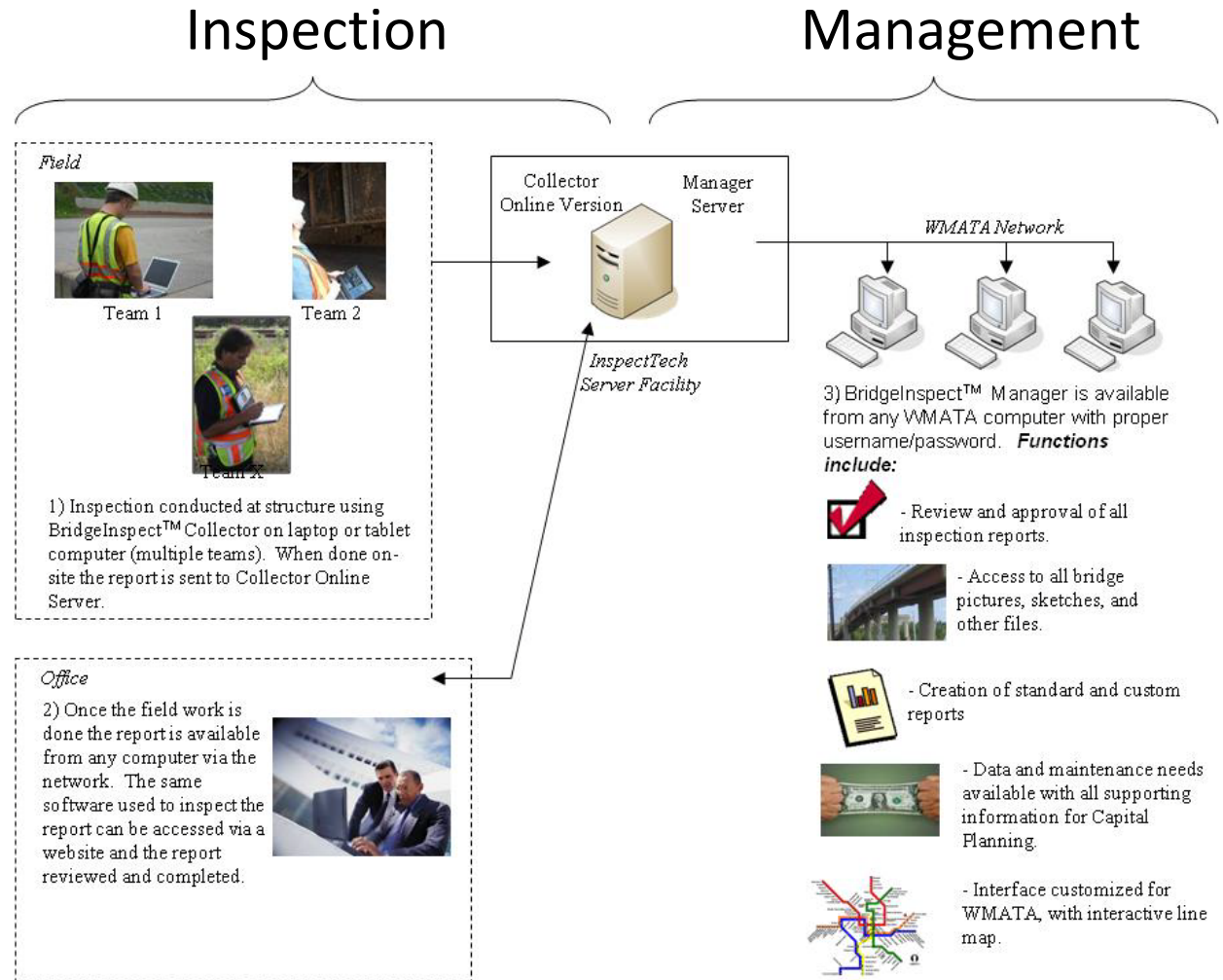


Inspection Software

- 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

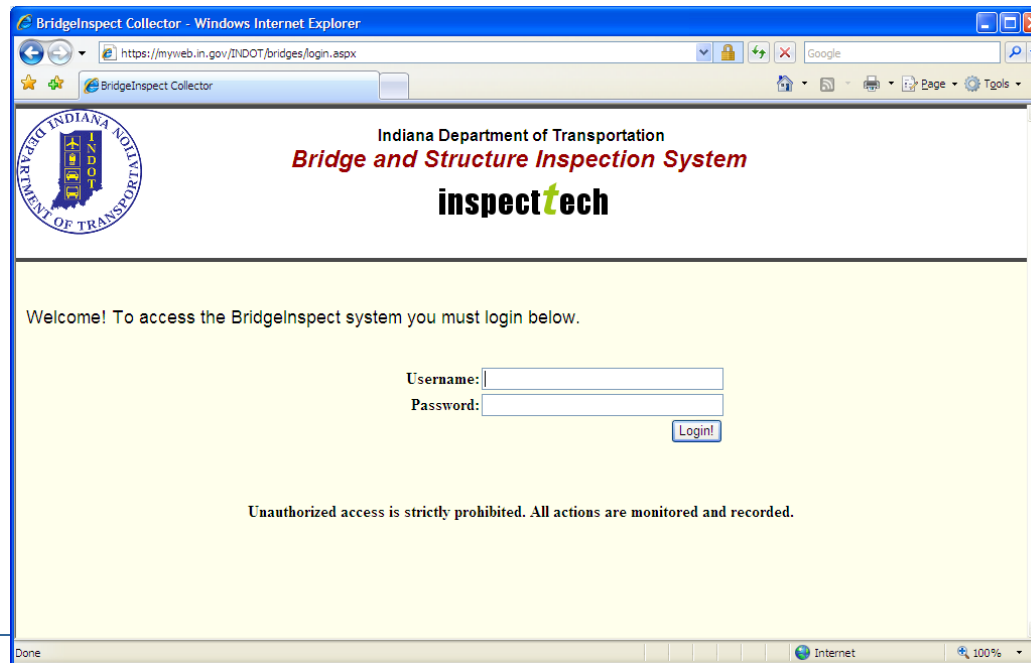


Inspection Software: Major Benefits

- 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



BridgeInspect Collector - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridges/index.aspx

Indiana Department of Transportation
Bridge and Structure Inspection System
 inspecttech

Messages: 0 new (view)

Quick Select:

Main Administration Views Reports Help

INDOT Central Office : Bill Dittrich (Logout)

In Progress In Progress on a Laptop Submitted for Approval Recently Approved


Inspection Date	Asset Name	Inspector	Feature Intersected	Facility Carried	Location	Status		
01/24/2009	912-45-02543 B	Wayne Skinner	SR 912, RAMPS, & RR	MICHIGAN AVENUE	1.34 W US 12	In progress		
01/24/2009	(933)33-71-07443 NEL	Wayne Skinner	SR 933 NBL	PEDESTRIAN WALK	0.78 N SR 23	In progress		
01/23/2009	194-21-02188 BEEL	Wayne Skinner	US 20, WILLOW CR & CSX	I-94 EBL	0.9 E I-90	In progress		
01/23/2009	194-44-02253 JAEB	Wayne Skinner	N & S RR	I-94 EBL	0.45 W US 20	In progress		
01/23/2009	194-21-02188 BWBL	Wayne Skinner	US 20, WILLOW CR & CSX	I-94 WBL	0.9 E I-90	In progress		
01/23/2009	194-29-02249 BWBL	Wayne Skinner	CONRAIL	I-94 WBL	1.36 E US 20	In progress		
01/23/2009	194-29-02249 BEEL	Wayne Skinner	CONRAIL	I-94 EBL	1.36 E US 20	In progress		
01/23/2009	194-44-02253 AWBL	Wayne Skinner	N & S RR	I-94 WBL	0.45 W US 20	In progress		

Filter Assets:

- State of Indiana
 - Border Bridges
 - Crawfordsville
 - (136)34-06-03291**
 - (136)34-23-03044
 - (136)34-23-03045
 - (136)34-54-00184 A
 - (231)43-54-01089 A
 - (231)43-54-01096 A
 - (231)43-54-02516 A
 - (231)43-54-05995 A

(136)34-06-03291

Asset Name: (136)34-06-03291
Code: 26890
Feature Intersected: EMILY GARDNER DITCH
Facility Carried: US 136
Dist. Code: 01 - Crawfordsville
Location: 2.55 W SR 75
Post: 51
Offset: 10



Done Internet 100%

Entry Form

BridgInspect Collector - Microsoft Internet Explorer

File Edit View Favorites Tools Help

P-0192001: **New SI&A Forms** Pontis PG.MD Forms Report Forms Old SI&A Forms Main Menu

1 - Ident. 2 - Class. & Traf. 3 - Struc. Type & Mat. 4 - Geometric 5 - Geo. Con't, Ratings, Post 6 - Cond. Ratings 7 - Appraisal & Navig./Hydr. 8 - Hist. & Improv. 9 - v

SI&A Form 6 - Condition Ratings

(90) Inspection Date

(91) Inspection Frequency

(92) Critical Feature Inspection

(93) Critical Feature Inspection Date

(58) Deck

(59) Superstructure

(60) Substructure

(61) Channel and Channel Protection

(62) Culverts

(332) Posting Signs

(340) Inspection Classification

Deck

5 - Fair Condition

- N - Not Applicable
- 9 - Excellent Condition
- 8 - Very Good Condition
- 7 - Good Condition
- 6 - Satisfactory Condition
- 5 - Fair Condition
- 4 - Poor Condition
- 3 - Serious Condition
- 2 - Critical Condition
- 1 - Imminent Failure Condition
- 0 - Failed Condition

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Page 6-5

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Link Pictures to Specific Fields

08A032

Report Info WV SI&A DS-25 DS-34 NBI Narrative

NBI Items Error Check

District 1 Main Menu

20. Toll: 3

21. Maintenance Resp.: 01

22. Owner: 01

37. Historical Significance: 5

CONDITION

58. Deck Condition: 5

59. Superstructure Condition: 4

60. Substructure Condition: 5

61. Channel Condition:

62. Culvert Underfill:

LOAD RATING AND POSTING

31. Design Load:

63. Operating Rating - Method Used:

64. Operating Rating - Tons: XXX

65. Inventory Rating - Method Used:

66. Inventory Rating - Tons: XXX

70. Bridge Posting:

41. Open, Posted, Closed: A

APPRAISAL

67. Structural Eval Appraisal: 3

NBI 60: Substructure

Details

Select New Picture

no pictures linked to this field.

Select Files

Spalled Upstream End of Abutment One ... Photo: 3

Spalled Downstream End of Abutment One ... Photo: 4

/loading_redirect.aspx?resolved=1&redirect=%2fmodal...

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Reference Pictures

032-83-03176
Primary Forms
Aux. Forms
SI&A
FC/UW/Spec.
P.o.A.
Scour
Load Rating
Rpt. Info
Crawfordsville
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

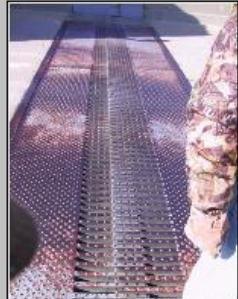
58.16 Transverse Joints Type

Details


Manuals



Page C - Tooth Joint (Finger Joint)



Field History



Pictures/Attachments Easy To Add

20A39Z

Report Info | WV S&A | DS-25 | DS-34 | HBI | Narrative | District 1 | Main Menu

BIMS | **Pics/Files** | Forms | Rpt. Sections | Maintenance Items

Attach Files/Picture | Attach Multiple Files/Pictures

Attach Files/Picture

File To Attach: Browse...

Type: Photo

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

Description:

Attach

Filter Files/Pictures

File Date: From: To:

File Description:


Filter

08A032

Report Info | WV S&A | DS-25 | DS-34 | HBI | Narrative | District 1 | Main Menu


BIMS | **Pictures** | Forms | Rpt. Sections | Maintenance Items

Photo 1




File: P3020003.JPG
Date: 3/2/2010
Attached as part of this report
Description: Elevation View Looking Upstream, ...
 Include File in Printed Report
 Set as Cover Photo
Edit Details | Delete

Photo 2



File: P3020001.JPG
Date: 3/2/2010
Attached as part of this report
Description: End View of Structure Looking North ...
 Include File in Printed Report
 Set as Cover Photo
Edit Details | Delete

Photo 3



File: P3020005.JPG
Date: 3/2/2010
Attached as part of this report
Description: Spalled Upstream End of Abutment One ...
 Include File in Printed Report
 Set as Cover Photo
Edit Details | Delete

Photo 4




Photo 5





Photo 6



Software Benefits: Repair Items & 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 Req. 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 Pictures	 Calc.		2	L.S.	--	\$500	\$500

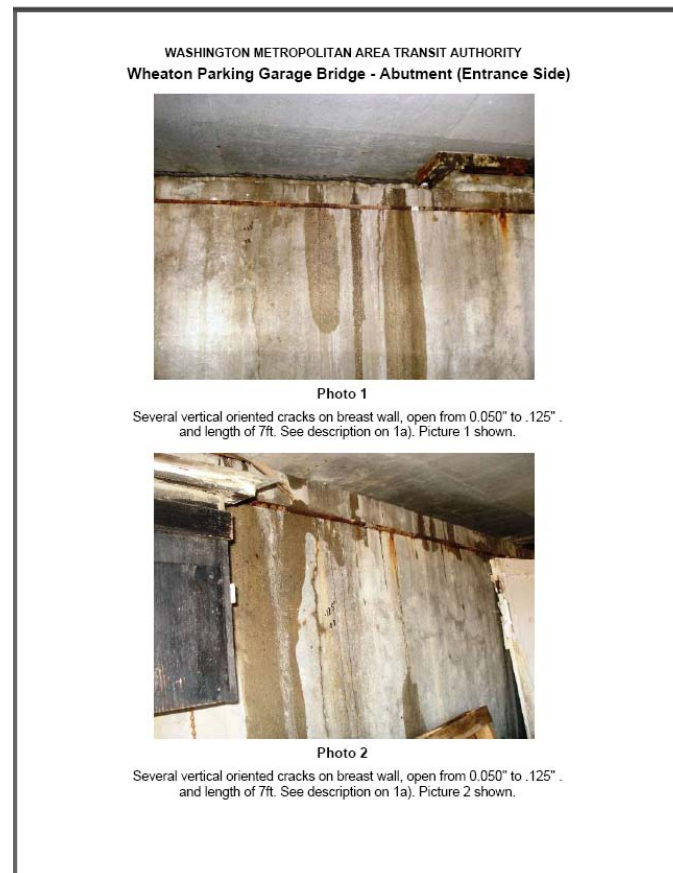
Item Code

- 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 Transtn
- 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 Matr.
- D8 - Replace Deck Joint
- D9 - Repair Steel Deck Panel
- D10 - Replace/Repair Timber Planking

Done Trusted sites | Protected Mode: Off 100%

Simple Report Generation

 WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY STRUCTURAL MAINTENANCE INSPECTION REPORT				
Wheaton Parking Garage Bridge				
Abutment (Entrance Side)	Inspected By: M. Perez Date Inspected: 5-13-08 Report Generated: 5-29-08			
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> Condition Rating N - Not Applicable 9 - Excellent Condition 8 - Very Good Condition 7 - Good Condition 6 - Satisfactory Condition </td> <td style="width: 33%; vertical-align: top;"> 5 - Fair Condition 4 - Poor Condition 3 - Serious Condition 2 - Critical Condition 1 - Imminent Failure Condition </td> <td style="width: 33%; vertical-align: top;"> Inspection Frequency 0 - Failed Condition </td> </tr> </table>		Condition Rating N - Not Applicable 9 - Excellent Condition 8 - Very Good Condition 7 - Good Condition 6 - Satisfactory Condition	5 - Fair Condition 4 - Poor Condition 3 - Serious Condition 2 - Critical Condition 1 - Imminent Failure Condition	Inspection Frequency 0 - Failed Condition
Condition Rating N - Not Applicable 9 - Excellent Condition 8 - Very Good Condition 7 - Good Condition 6 - Satisfactory Condition	5 - Fair Condition 4 - Poor Condition 3 - Serious Condition 2 - Critical Condition 1 - Imminent Failure Condition	Inspection Frequency 0 - Failed Condition		
ITEM	NO.	REMARKS		
i. Drains and weep-holes.	4	i)Mud/dirt draining out of 3"D. pipes on east/west side wing walls and breast wall Collecting up to 2 buckets full. Material draining from approach slab.		
j. Joints (expansion, construction, cold).	4	j)Backer rod installed between end of span and backwall,therefore blocking visual inspection to any expansion joint.However,joint is leaking water and soil onto bearings causing corrosion and affecting movement See picture #4.		
k. Bearings Assemblies (List type and size)	4	k)Pot bearings fix at entrance side.		
1. Physical condition.	4	K1)Steel chipping and concentrated loss of section(2%) on exterior surface,up to 50% of device is corroded. Picture #5.		
2. Working condition.	4	K2)Working condition is affected by heavy corrosion. Ongoing construction on deck, unable to determine working conditions.		
3. Sole Plate.	5	K3)Stable, with some steel exposed due to grout pad deterioration throughout.		
l. Exposed / deteriorated re-bars.	6			
m. Concrete Patches.	4	m)Spalled concrete on grout pads. Bearings		
n. Grout / masonry pads.	4	1n)As indicated above,grout pads(21x18x5in) are spalling full face and deep up to 1.5" on bearings 2,3.See pictures #6.		
THINK SAFETY FIRST				



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: [v]

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 [v]

Frequency: [] Months [v]

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 [v]

Frequency: 24 Months [v]

Freq. Description: []

Date Due: [] []

BridgeInspect Collector

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

Internet 100%

Risk-Based Prioritization



Hazard Severity. The hazard severity is an assessment based on the inspector's experience, of the worst potential consequence, as determined by degree of injury or damage, which is possible to occur as a result of an identified deficiency. Hazard severity categories shall be assigned according to the following criteria:

- Catastrophic: May cause death or result in permanent loss-of-use of the structure; replacement of structure would be required.
- Critical: May cause severe bodily injury or temporary loss-of-use of all or a portion of the structure.
- Marginal
- Negligible

Risk-Based Prioritization



Likelihood of Outcome. The likelihood of outcome represents the inspector's subjective estimation of the possibility of a hazard resulting in a negative outcome, based on the inspector's judgment, a qualitative assessment of such factors as location, use, and traffic volume, and assigned using the following criteria as a guide:

- Likely to occur either immediately, or within a short period of time, or prior to the next regularly scheduled inspection.
- Likely to occur eventually.
- Possibly could occur eventually.
- Unlikely to occur in the foreseeable future.

Risk-Based Prioritization



Priority Assessment Code. The PAC is an expression of priority which combines the elements discussed above. Using the matrix shown below, the PAC is expressed as an integer that can be used to help assign repair priorities using 1 as the highest priority and 7 as the lowest priority.

HAZARD SEVERITY	OUTCOME LIKELIHOOD			
	A	B	C	D
I	1	2	3	4
II	2	3	4	5
III	3	4	5	6
IV	4	5	6	7

Risk-Based Prioritization

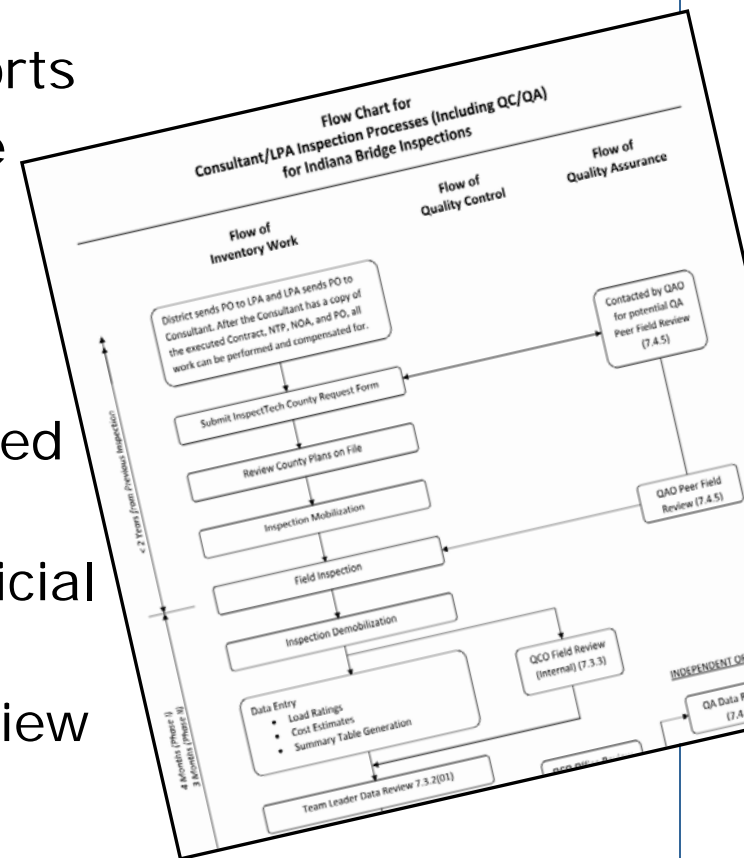


- Identify needs on multiple criteria
- Organize repairs based on vulnerability and cost

Recommendation (See Footnote 1)		Risk Assessment	Estimated Cost (\$)	
Description:		Hazard Severity:	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		2 - Critical		
		Consequence Probability:		
		B - Likely to occur		
		Calculate RAC		
		Urgency Index: 3 Urgent Item:	960	
		Recommendation Order:		
		Maint/Repair/Rehab		
Calculate Totals				
				Select New Picture
There are no pictures linked to this record.				

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

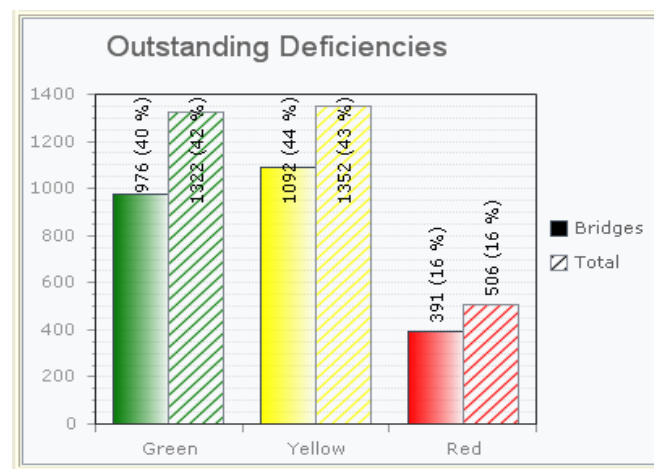
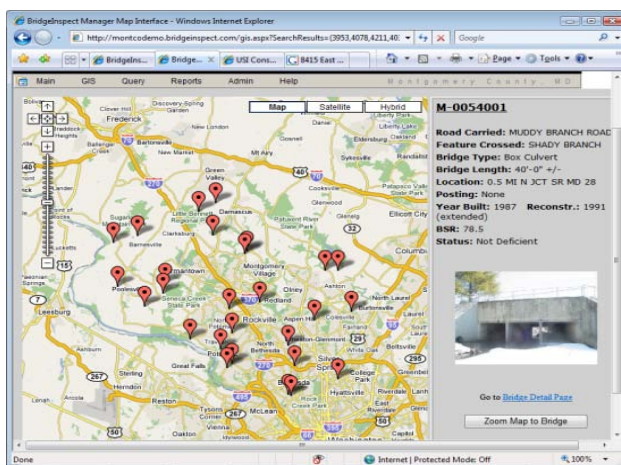
Pictures/Sketches

GIS

Reporting/Searching

Instant Access

Cost Estimates



Easy Interface - Web Enabled

- Customized interface for agency's needs
- Accessible securely from anywhere, anytime via Internet

The screenshot shows the BridgeInspect Manager web application running in Internet Explorer. The browser title is "BridgeInspect Manager - Windows Internet Explorer" and the address bar shows "https://myweb.in.gov/INDOT/bridgestat/main.aspx". The page header includes the Indiana Department of Transportation logo, the text "Indiana Department of Transportation Bridge and Structure Inspection Management System", and the "inspect^ttech" logo. The date "Tuesday, June 02, 2009" and "Messages: 8 new (view)" are displayed in the top right. A navigation menu contains "Main", "GIS", "Query", "Reports", "Administration", and "Help". A "Quick Select" search box is labeled "Type bridge name here" with a "Find an asset" button. The main content area is divided into two sections: "Most Recent Bridges Accessed:" and "Most Recent Inspection Reports Approved:". The bridge list includes "Sevmour: I65-85-05527 BNBL", "Greenfield: P000-81-07067", "Greenfield: 009-48-03769", "Sevmour: I65-98-05558", and "Sevmour: I64-103-04691 C". The report list includes "Sevmour: I65-85-05527 BNBL (View PDF of inspection)", "Sevmour: P000-24-07513 (View PDF of inspection)", "Sevmour: I65-100-05559 BSBL (View PDF of inspection)", "Sevmour: I65-100-05559 BNBL (View PDF of inspection)", and "Sevmour: I65-98-05558 (View PDF of inspection)". A photograph of a bridge over a river is shown on the right, with the caption "(Crawfordsville) 028-86-06898". The footer contains "Conditions of Use" and "© InspectTech 2008".

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



Indiana Department of Transportation
Bridge and Structure Inspection Management System

inspecttech

Tuesday, June 02, 2009

Messages: 8 new ([view](#))

Main GIS Query Reports Administration Help

Quick Select:

[Find an asset](#)

Seymour: I65-85-05527 BNBL

Bridge Number: I65-85-05527 BNBL

NBI Number: 35740

Feature Intersected: SUGAR CREEK

Facility Carried: I-65 NBL

District Code: 05 - Seymour

Location: 3.76 S SR 44

Post: 85

Offset: 80

Name of Structure:

Latitude: 39 - 26. - 06.00

Longitude: 085 - 58. - 54.00

Click [here](#) to see the location of the structure.

Click [here](#) to change the central database values.

Click [here](#) to view audit history for this asset.

Click [here](#) to view the central database values report for this asset.



Inspection Due Dates

Next Routine Inspection Due Date: 5/21/2011

Next Underwater Due Date: 11/1/2011

Inspection Reports

BridgeInspect Manager - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridgestat/bridgedetail.aspx?type=0&as_id=30927

File Edit View Favorites Tools Help

BridgeInspect Manager

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




Photo 1: Bridge railing and water.

Photo 2: Interior view of a bridge structure.

Photo 3: View of a bridge pier and surrounding area.










Internet 100%

BridgeInspect Manager - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridgestat/bridgedetail.aspx?type=0&as_id=30927

File Edit View Favorites Tools Help

BridgeInspect Manager

 <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, slopewall 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, slopewall settlement, rust on bearings.JPG</p> <p>Edit Details</p>
 <p>File: IMG_8404 South view north, hole in slopewall, 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 slopewall, 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%

BridgeInspect Manager - Windows Internet Explorer

https://myweb.in.gov/INDOT/bridgestat/bridgedetail.aspx?type=0&as_id=30927

File Edit View Favorites Tools Help

BridgeInspect Manager

No history or notes found
Create New History / Note

Deficiencies

Create New Deficiency Item Show Completed Items Filter by status: [v]

In Progress Items:

Completed	Status	Report Date	Date of Correction	Description of Deficiency	Reported By	Phone	
<input type="checkbox"/>	To Do [v]	6/1/2009		Hole near top of slope wal	Jerry L. Martin	812-524-3960	F

Contracts

Create New Contract Show Completed Items Filter by status: [v]

In Progress Items:

Completed	Status	Contract Number	Date Due	Date Completed	Description of Contract	Des Number	
<input type="checkbox"/>	Started [v]	B-31728	6/9/2010		Scour Protection (Erosion	0810069	M






Internet 100%

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: Order:

<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	

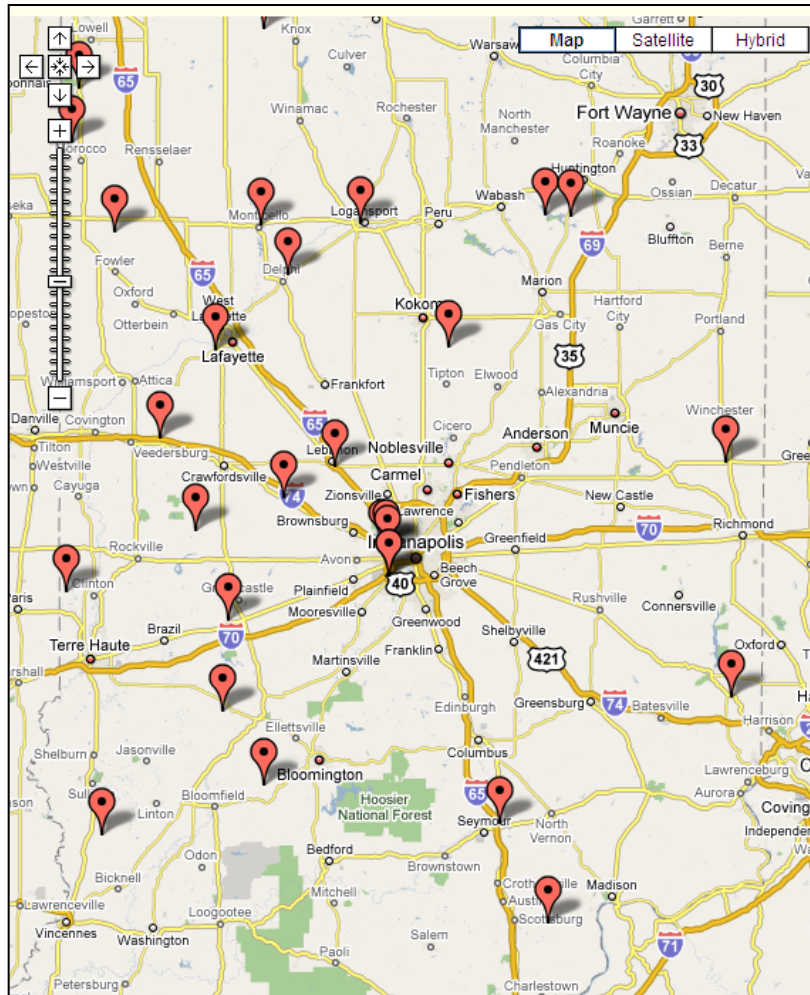
System Reports

- 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.

Export Results to Map



039-06-04115 B

Bridge Number: 039-06-04115 B

NBI Number: 13290

Feature Intersected: I-65

Facility Carried: SR 39

District Code: 01 - Crawfordsville

Location: 0.9 S SR 32

Post: 63

Offset: 74

Name of Structure:

Latitude: 40 - 02. - 06.00

Longitude: 086 - 28. - 18.00



Go to [Bridge Detail Page](#)

Zoom Map to Bridge

Browser navigation bar with address bar: https://myweb.in.gov/INDOT/bridgestat/gis_orig.aspx?sq_id=677

File Edit View Favorites Tools Help

★ Favorites | ★ Free Hotmail | Web Slice Gallery | Suggested Sites

BridgeInspect Manager

Main GIS Query Reports Administration Help



039-06-04115 B

Bridge Number: 039-06-04115 B
NBI Number: 13290
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Location: 0.9 S SR 32
Post: 63
Offset: 74
Name of Structure:
Latitude: 40 - 02. - 06.00
Longitude: 086 - 28. - 18.00



Advanced Views

- Satellite View
- Interactive StreetView



results[1].csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11

Wrap Text

General

Conditional Formatting Format as Table Cell Styles

Insert Delete Format

AutoSum Fill Clear Sort & Find & Filter

E1 Feature Intersected

	A	B	C	D	E	F	G	H	I
1	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	WHITWATER 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[,RAMP[, 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 CFRI	3	41990	I-465 - W LEG	I-70 FRI	4	4	6

Ready

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

Prioritized Reports By Component

DECKS - OCR

Sorted by Overall Condition Rating utilizing all four condition states

Criteria selected for this report includes:

Turnpike District(s): 8
Mile 0.00 to 175.00

Parkway Area(s):

Top of Deck (DTD)

Overall Condition Rating Parameters (OCR)				Overall Condition Rating Parameters 3 and 4 only (OCRa)			
1	2	3	4	1a	2a	3a	4a
1	2	8	10	0	0	0	10

Underdeck Bare (DUB)

Overall Condition Rating Parameters (OCR)				Overall Condition Rating Parameters 3 and 4 only (OCRa)			
1	2	3	4	1a	2a	3a	4a
1	2	8	10	0	0	0	10

Underdeck with Pans (DUWP)

Overall Condition Rating Parameters (OCR)				Overall Condition Rating Parameters 3 and 4 only (OCRa)			
1	2	3	4	1a	2a	3a	4a
1	2	8	10	0	0	0	10

Dist/ Area (Div)	Milepost	Description	Top Deck Type			Decks - Top Deck					Decks - Underdeck Bare			Decks - Under w/Pans			Latest Inspection
			AO	NS	LMC	OCR	OCRa	OCR	OCRa	Total	OCR	OCRa	Total	OCR	OCRa	Total	
1) 8 (T) MP 117.67NI			0	0	0	7.5	0	4	0	12376	1	0	416	1	0	11960	
2) 8 MP W109.16			0	0	0	6.51	0.48	3.32	0.32	32768	1.02	0	1024	1	0	31744	
3) 8 MP W112.85			0	0	0	5.24	0	2.49	0	24835	1	0	809	1	0	24026	
4) 8 MP W116.10			0	0	0	4.94	0	2.29	0	99468	1	0	9362	1	0	90106	
5) 8 MP W108.91			0	0	0	4.83	0	2.1	0	24855	1.12	0	688	1	0	24167	
6) 8 (T) MP 117.67NO			0	0	0	3.66	0	1.44	0	17995	1	0	1220	1	0	16775	
7) 8 MP W108.79A			0	0	0	3.62	0	1.38	0	20109	1.03	0	606	1.01	0	19503	
8) 8 (T) MP 105.56SO			0	0	0	3.48	0	1.25	0	11310	1.07	0	9998	1	0	1312	
9) 8 MP W112.97			0	0	0	3.47	0	1.31	0	25080	1	0	836	1.02	0	24244	
10) 8 (T) MP 117.67SI			0	0	0	3.44	0	1.29	0	16422	1	0	952	1	0	15470	
11) 8 MP W109.34			0	0	0	3.23	0	1.12	0	18688	1.03	0	584	1	0	18104	
12) 8 MP W112.72B			0	0	0	3.05	0	1.02	0	13815	1.01	0	1842	1	0	11973	
13) 8 MP E106.15A			0	0	0	3.03	0	1	0	43719	1.02	0	2238	1	0	41481	
14) 8 (T) MP 105.56NT			0	0	0	3.02	0	1.01	0	11505	1	0	585	1	0	10920	
15) 8 MP W112.72C			0	0	0	3.02	0	1	0	8051	1.01	0	388	1	0	7663	
16) 8 MP W112.67			0	0	0	3.02	0	1	0	11189	1.01	0	3698	1.01	0	10819	

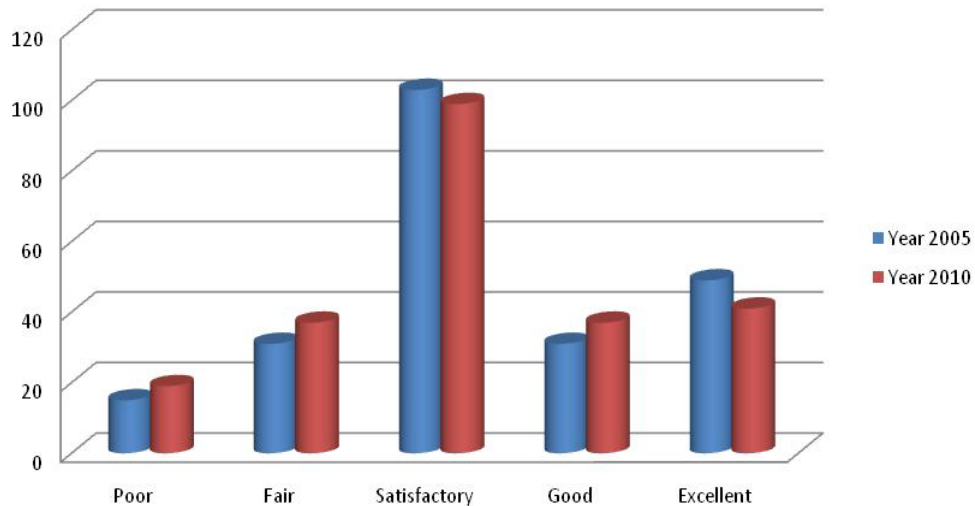
Top Deck Type: AO (Asphalt Overlay), NS (No Surfacing), LMC (Latex Modified Concrete);

OCR: Overall Condition Rating (includes all 4 condition states); OCRa: Overall Condition Rating (includes only Condition States 3 and 4);

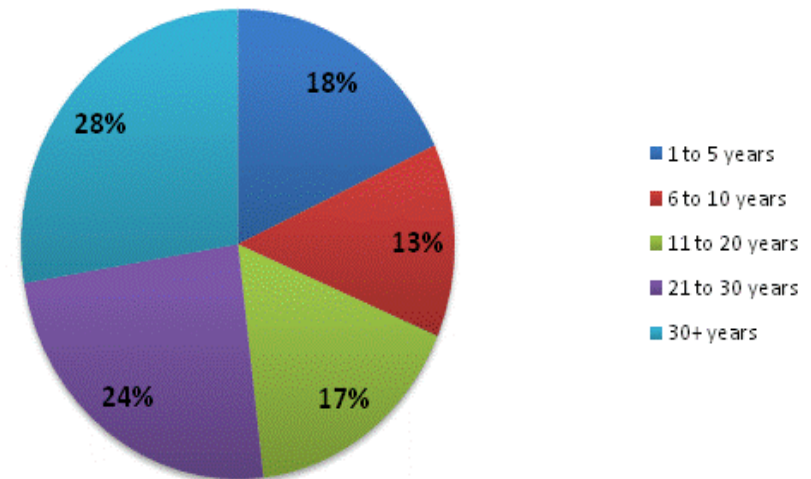
Decks Top Deck: OCR (Overall Condition Rating for Top of Deck only in all 4 Condition States), OCRa (Overall Condition Rating for Top of Deck only in Condition States 3 and 4);

Easily Generate Graphical Output

Overall Bridge Structure Condition



Estimated Remaining Deck Life (Years)



Organized Maintenance Needs

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

P-30

Last Inspected:
[5/7/2009](#)

	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

P-37

Last Inspected:
[7/3/2007](#)

	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

P-41

Last Inspected:
[4/30/2009](#)

	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

Test Bridge

Last Inspected:
[2/16/2005](#)

	Description	Priority Code	Item Code	Quantity	Manual Unit Cost	Manual Total Cost
1	Some descriptionsl;fsl;d;f;k	1	R10	2	100	\$200
Total Bridge Repair Cost:						\$200

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

Summary

Exceptional Results

- Strong core system that is widely adopted
- One-stop location for all structure data
- Very easy to learn for users, little training required
- Significantly improved sharing of information
- Greatly simplifies office work in preparing a report
- Helps prevent some of the most common errors
- Provided consistent high quality, format for inspection reports
- Instant access to all information on structures
- Provides for effective management tools
- Proven and supported system continues to be developed

Questions

