

Considerations

Implementation

CEBIS

Features

Database Systems

DATABASE TOOLS FOR CIVIL WORKS PROJECTS



Considerations

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CEBIS

Features

Database Systems

· COMPONENTS

• IMPLEMENTATION

•<u>CEBIS</u>



Considerations

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Database System Development

Purpose

- ***MEET REQUIREMENTS**
- ***GATHER DATA**
- ***MONITORING**
- ***DATA REDUCTION**
- ***DECISION MAKING**
- ***ARCHIVING**



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Database System Development

Considerations

- ***PURPOSE/GOALS**
- ***FORMAT**
- ***STANDARDIZE**
- **SIMPLIFY**
- ***CONSISTANCY**
- ***EFFICIENCY**



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Database System Development

Standardization

- ***RECORDING**
- ***REPORTING**
- ***REVIEW**



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Database System Development

Web Based

1. Advantages

- a. Follow the Trend
- b. Easy Updates/Maintenance
- c. Greater Administrative Control/Access
- d. Centralized Database

2. Disadvantages

- a. Reliability
- b. Less Local Control
- c. Limitations



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Database Systems

IMPLEMENTATION

- Acceptance
- **❖Useful ❖All Levels**
- ***Cost Effective**



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Database Systems

INSPECTION TOOL

- **❖Get Work Done**
- **❖Increase Efficiency/Effectiveness**
- *Consistency



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DEVELOPMENT

- Meet Reporting Requirements
- Update Existing Program
- Plagiarize
- Address Complaints
- Web Based
- Implemented in 2005



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DEVELOPMENT

- Incorporate ER
 - References
 - Criteria
 - Standards



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US Army Corps of Engineers Bridge Inventory System
CEBIS
□ Data Entry and Approval Access Instructions: □ CEBIS Login: Password: □ □
DOC for this page is Doul Top (CECW EI):
POC for this page is Paul Tan (CECW-EI):

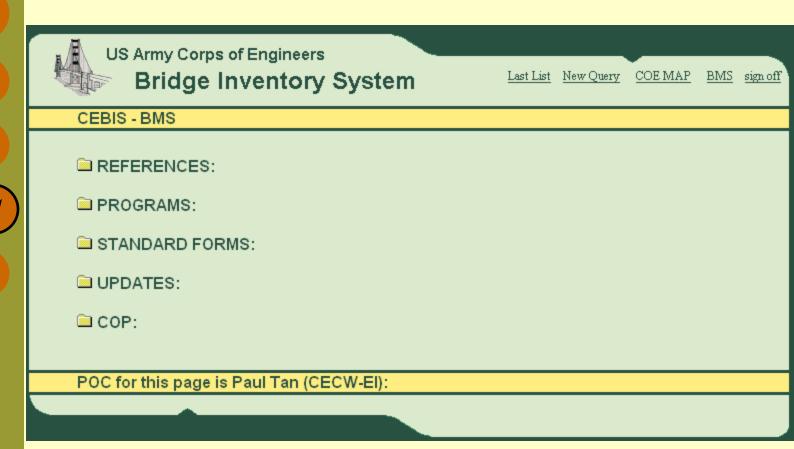


Considerations

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CEBIS Features



Last List New Query COE MAP BMS sign off

CEBIS - BMS

- REFERENCES:
 - . ER References:
 - Other References:
 - Criteria / Procedures:
- PROGRAMS:
- STANDARD FORMS:
- UPDATES:
- COP:



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US Army Corps of Engineers Bridge Inventory System

Last List New Query COE MAP BMS sign off

CEBIS - BMS - ER References

- 23 F.R. 650, "National Bridge Inspection Standard," December 2004.
- ER 1110-2-100, Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures.
- ER 1110-2-101, Reporting of Evidence of Distress of Civil Works Structures.
- EM 385-1-1, Safety and Health Requirements Manual.
- "AASHTO LRFD Bridge Design Specifications" (latest edition).
- "Bridge Inspector's Reference Manual," October, 2002, Federal Highway Administration, 6300 Georgetown Pike, McLean, VA 22101
- "Movable Bridge Inspection, Evaluation, and Maintenance Manual," AASHTO, 1998.
- "Construction and Maintenance Section," American Railway Engineering Association, Volumes I & II.
- "Culvert Inspection Manual," Federal Highway Administration, FHWA-IP-86-2, July 01, 1986.
- "Evaluating Scour at Bridges," FHWA Technical Advisory T5140.23, October 28, 1991.
- "Evaluating Scour at Bridges," Hydraulic Engineering Circular (HEC) 18, Federal Highway Administration, FHWA-NHI-01-001, May 01, 2001.
- "Stream Stability at Highway Structures, Third Edition", Hydraulic Engineering Circular (HEC) 20, Federal Highway Administration,
 FHWA-NHI-01-001, March, 2001.
- "Bridge Scour And Stream Instability Countermeasures", Hydraulic Engineering Circular (HEC) 23, Federal Highway Administration, FHWA-NHI-01-001, March, 2001.
- "Guide Specifications for Design of Pedestrian Bridges" (latest edition), American Association of State Highway and Transportation
 Officials.
- "Guide Specifications for Fatique Evaluation of Existing Steel Bridges," American Association of State Highway and Transportation
 Officials, 1990.
- "Inspection of Fracture Critical Bridge Members," Federal Highway Administration, FHWA-IP-86-2, September 01, 1986, supplement to reference 4f.
- "Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges, "American Association of State Highway and Transportation Officials, 444 N. Capitol Street NW, Washington, DC 20001 (latest edition).
- "Manual for Railway Engineering," American Railway Engineering and Maintenance-of-Way Association, Volumes I & II (latest edition).
- OSHA Standard 1926.106(a), Personal Protective and Life Saving Equipment, "Standards Interpretation, Fall Protection, Lifejacket, and Lifesaving Requirements When Working Over or Near Water."
- "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nations Bridges." Design and Inspection Branch



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US Army Corps of Engineers

Bridge Inventory System

Last List New Query COE MAP BMS sign off

CEBIS - BMS - Other References

- · Link to FHWA site
- · AASHTO Subcommittee on Bridges and Structures
- . The American Railway Engineering and Maintenance of Way Association
- · National Highway Institute
- · FHWA Bridge Technology
- · FHWA Technical Advisories
- National System of Interstate and Defense Highways



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US Army Corps of Engineers

Bridge Inventory System

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CEBIS - BMS - Criteria / Procedures

- · Load Rating
- · Scour Evaluations Procedures/Plans of Action
- · Fracture / Fatigue
- · Seismic Evaluations
- · Emergency Procedures
- · Follow Up / Monitor Critical Findings
- · Inspection Intervals
- · Railway Brdiges
- Inspection Types
- QC/QA Procedures



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<u>Last List New Query COE MAP BMS sign off</u>

CEBIS - BMS

- REFERENCES:
- PROGRAMS:
- STANDARD FORMS:
 - QCP/5-Year Plan
 - · Scour Monitoring
 - FCM Plan
 - QA Checklist
 - QC Checklist
- UPDATES:
- COP:



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<u>Last List New Query COE MAP BMS sign off</u>

CEBIS - BMS

- REFERENCES:
- PROGRAMS:
- STANDARD FORMS:
- □ UPDATES:
 - Comments
 - · Search Program Changes:
 - . Most Recent Changes:
 - . Standard Procedure Changes
 - . Interim Policy Changes

COP:

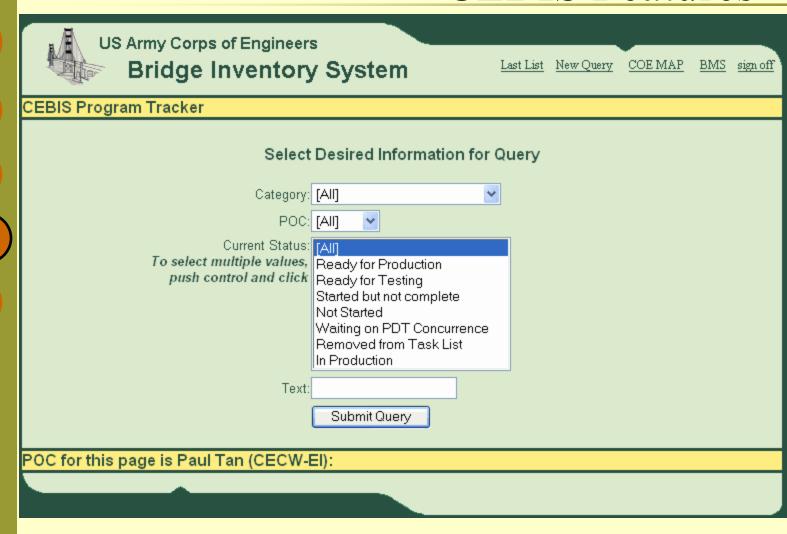


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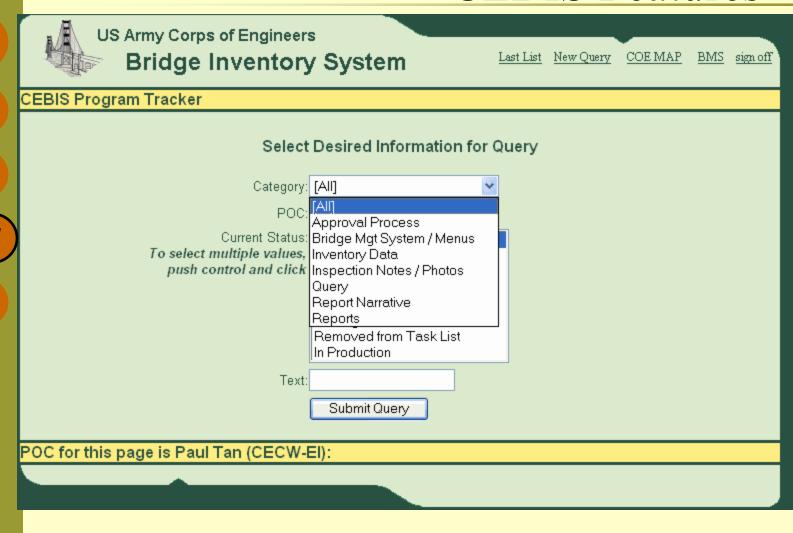


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US Army Corps of Engineers Bridge Inventory System

Last List New Query COE MAP BMS sign off

CEBIS Program Tracker - Status as of 7/25/2005

New Search

Post New Message

(3) Bridge Mgt System / Menus: Bonnie Montgomery 08-JUL-2005

Assigned To: Phillip Sauser

Provide a location within CEBIS for viewing and commenting on ER changes. Restrict access.

- Available for Testing using Groove
- (1) <u>Bridge Mgt System / Menus:</u> Bonnie Montgomery 08-JUL-2005 Assigned To: Bonnie Montgomery Add BMS pages
 - Started by not complete -
- \$ (4) Bridge Mgt System / Menus: Bonnie Montgomery 08-JUL-2005

Assigned To: Bonnie Montgomery

Finish Bridge File page

- Started by not complete -
- (2) Bridge Mgt System / Menus: Bonnie Montgomery 08-JUL-2005

Assigned To: Bonnie Montgomery

Provide a site accessible to those outside the Corps for review

- Not Started -
- (5) Inspection Notes / Photos: Bonnie Montgomery 08-JUL-2005

Assigned To: Bonnie Montgomery Incorporate QC/QA processes

- Not Started -
- (39) Inventory Data: Bonnie Montgomery 11-JUL-2005

Accianad Ta: Phillin Saucai



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CEBIS - BMS

- REFERENCES:
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 - Comments
 - · Search Program Changes:
 - . Most Recent Changes:
 - . Standard Procedure Changes
 - . Interim Policy Changes

COP:



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US Army Corps of Engineers Bridge Inventory System

Last List New Query COE MAP BMS sign off

CEBIS Program Tracker - Recent Changes

(51) Inventory Data: Bonnie Montgomery 25-JUL-2005

Assigned To: Bonnie Montgomery

Modify wording on pop-up box displayed when a bridge is deleted.

In Production - July 2005

(49) Reports: Bonnie Montgomery 22-JUL-2005

Assigned To: Bonnie Montgomery

Report narrative body appears to be Font style: Arial. Report narrative bullets appear to be Times new Roman. Report pictures headings appear to be Times new roman. Is this intended? I suggest using the same font style, but change text height for effect.

In Production - July 2005

(47) Reports: Bonnie Montgomery 15-JUL-2005

Assigned To: Bonnie Montgomery

Printing the reports...SI&A sheet, above item 67, Appraisal is misspelled

In Production - July 2005

(15) Inventory Data: Bonnie Montgomery 08-JUL-2005

Assigned To: Bonnie Montgomery

Include item 62 for pedestrian bridges (currently NA).

In Production - July 2005

(42) Inspection Notes / Photos: Bonnie Montgomery 11-JUL-2005

Assigned To: Bonnie Montgomery

Add elements 309 and 338

In Production - July 2005

Go To Page: 1 2 3 4 5 6 7



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<u>Last List New Query COE MAP BMS sign off</u>

CEBIS - BMS

- REFERENCES:
- PROGRAMS:
- STANDARD FORMS:
- □ UPDATES:
 - Comments
 - · Search Program Changes:
 - . Most Recent Changes:
 - . Standard Procedure Changes
 - . Interim Policy Changes

COP:

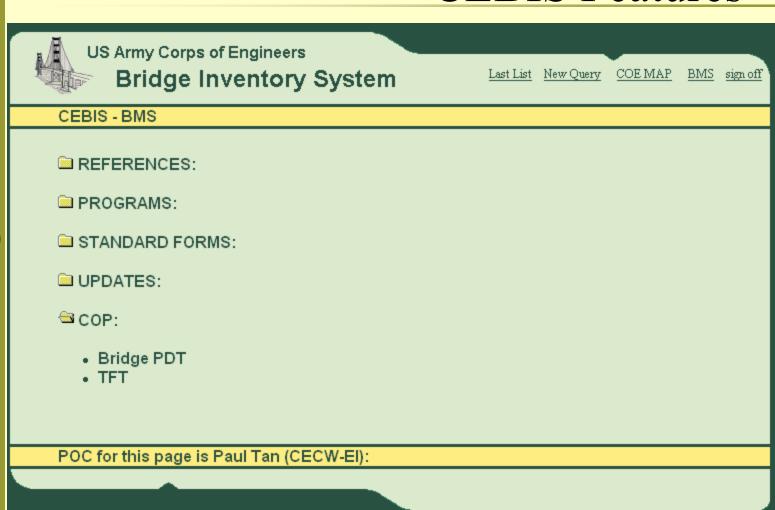


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US Army Corps of Engineers

Bridge Inventory System

Last List New Query COE MAP BMS sign off

CEBIS - BMS - COP - PDT

- · Paul Tan, HQUSACE
- · Thomas Tam, NAD
- · Robert Fulton SAD
- · Robert Taylor, LRD
- · Ken Klaus, MVD
- · John Morris, SWD
- · Victor Yan, SPD
- · Bruce McCracken, NWD
- Allen Taira, POD
- · Phil Sauser, MVP



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Last List New Query COE MAP BMS sign off

CEBIS - BMS

- REFERENCES:
- PROGRAMS:
 - · CEBIS user manual
 - Problem Reporting
 - · Access Instructions
 - Load Rating
 - Fatigue
- STANDARD FORMS:
- UPDATES:
- COP:

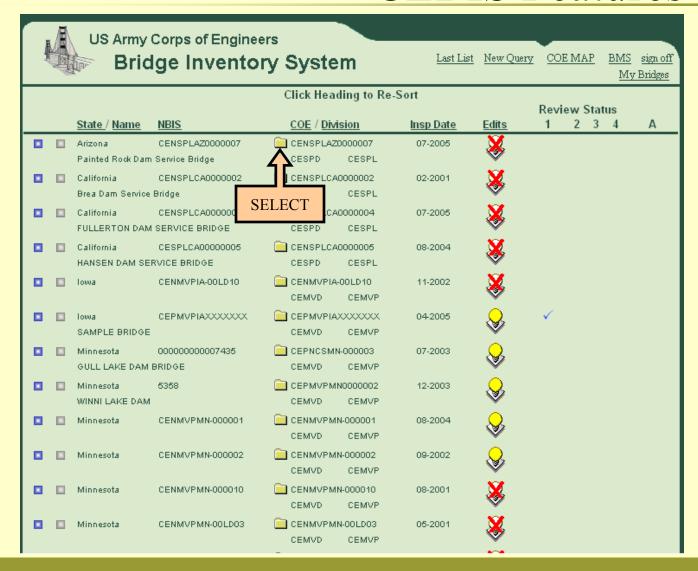


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US Army Corps of Engineers Bridge Inventory System

My Bridges

Query COE MAP

Error Report Add COE Bridge

Structure Number CEPNCSMN-000003

Name GULL LAKE DAM BRIDGE **NBI Structure Number** 000000000007435

Bridge File

COMPONENTS

Plans: 0 files, 0 KB.

Specifications: 0 files, 0 KB.

Correspondence: 0 files, 0 KB.

Photos: 0 files, 0 KB.

Materials and Tests: 0 files, 0 KB.

Maintenance and Repair History: 0 files, 0 KB.

Coating History: 0 files, 0 KB.

Accident Records: 0 files, 0 KB.

Posting: 0 files, 0 KB

Permit Loads: 0 files, 0 KB.

Flood Data: 0 files, 0 KB.

Traffic Data: 0 files, 0 KB.

Inspection History: 0 files, 0 KB.

Inspection Requirements: 0 files, 0 KB.

SI&A Sheet: 0 files, 0 KB.

Inventories and Inspections: 0 files, 0 KB

Rating Records: 0 files, 0 KB.

INSPECTION DATA

Inspection Reports: 0 files, 0 KB.

Waterway Adequacy: 0 files, 0 KB.

Channel Profile: 0 files, 0 KB.

Restrictions on Structure: 0 files, 0 KB.

Utility Attachments: 0 files, 0 KB

Plans, shop, and/or as-built drwgs avail, and on file

Specs available and on file

Pertinent to bridge history, chronological order

Plan, elevation, and other pertinent photos

Material certs & test data avail. & on file

Chronol, record documenting maint, and repairs

Prep, application, thick., & types of paint & protec.

Dates, descrip., damage, repairs, and reports

Summary of posting actions, calcs, date, signs

Record of significant special single trip permits

History of major events, high water, scour

History of variation & types of traffic

Chronological record of dates & types

Lists of tools, equip., special details, safety & traffic

Chronological record of SI&A sheets

Reports & results of all other inventories & inspec.

Complete record of load capacity determination

Previous to automaticly generated CEBIS reports

Item 79 & 113

Show foundation info. & changes over time

Load, speed, or traffic

Attached and in ROW

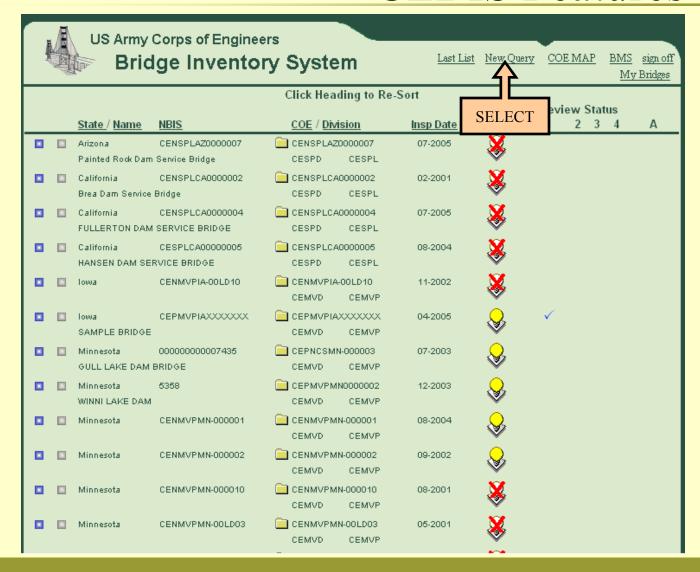


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US Army Corps of Engineers Bridge Inventory Sy	rstem		My Bridges	Query CO	E MAP sign off Add COE Bridge
NBI 1-12 NBI 13-32 NBI 33-44 NBI 45-60	NBI 61-76	NBI 90-104	NBI 105-116	over 200	Run
1: State	[All]	~			
2: District					
3: County	[All] 💌				
4: Place Code					
5a:Record Type	[AII]			~	
5b:Route Prefix	[AII]	1	~		
5c:Service Level	[AII]			~	
5d:Route Number					
5e:Directional Suffix	[AII]	~			
6: Features Intersected					
7: Facility Carried by Structure:					
9: Location					
10:Min. Vert Clearance	thru	п	neters		
11:Kilometerpoint	thru	k	ilometers		
12:Base Highway	[All]	~			



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							_				
	4		Corps of Engind	ory System		My Bridges		ery C r Repor	:OE M. t <u>Ad</u>	AP sign off d COE Bridge	
	Click Heading to Re-Sort										
		· · · · · · · · · · · · · · · · · · ·				Review Status					
		State / Name	NBIS	COE / Division	Insp Date	<u>Edits</u>	1	2	3 4	Α	
		Minnesota	000000000007435	☐ CEPNCSMN-000003	07-2003	Q				2004	
		GULL LAKE DAM	BRIDGE	CEMVD CEMVP		3					
1 .		Minnesota	5358	☐ CEPMVPMN0000002	12-2003	0				2004	
		WINNI LAKE DAM		CEMVD CEMVP		3					
l .		Minnesota	CEPNCSMN-000002	CEPNCSMN-000002	12-2003	0				2004	
] -	_			CEMVD CEMVP		ॐ					
۱.		Minnesota	CEPNCSMN-000004	CEPNCSMN-000004	09-2004	<u> </u>				2004	
-	_	Lac Qui Parle Dan		CEMVD CEMVP	00-200-1	≫				2004	
l		Minnesota	CEPNCSMN-000005	CEPNCSMN-000005	10-2003					2004	
١.	-	Chippewa River Di		CEMVD CEMVP	10-2003	৺				2004	
L		• •		-	40.0000	<u> </u>				0004	
ľ	-	Minnesota	CEPNCSMN-000006	CEPNCSMN-000006 CEMVD CEMVP	10-2003	₩				2004	
Ι.	_	Watson Sag		-		Ă				,	
•		Minnesota	CEPNCSMN-000007	CEPNCSMN-000007	09-2004	₩/	·	· ·	v v	2004	
		Browns Valley Cul		CEMVD CEMVP						,	
•		North Dakota	CEPNCSND-00BH02	CEPNCSND-00BH02	09-2004	₩	V	V	V V	2004	
		EGGERTS LANDII	NG BRIDGE	CEMVD CEMVP		~					
		South Dakota	CEPNCSSD-000008	CEPNCSSD-000008	06-2004	S				2004	
				CEMVD CEMVP		~					
		Bridge Coun	t: 9								

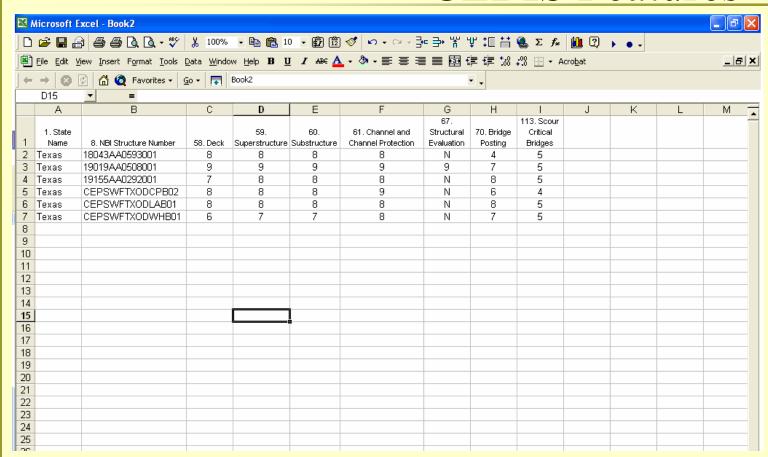


Considerations

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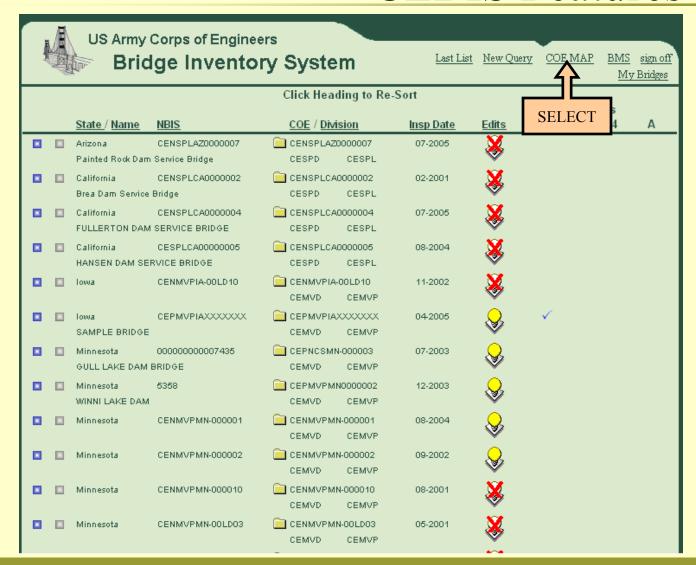


Considerations

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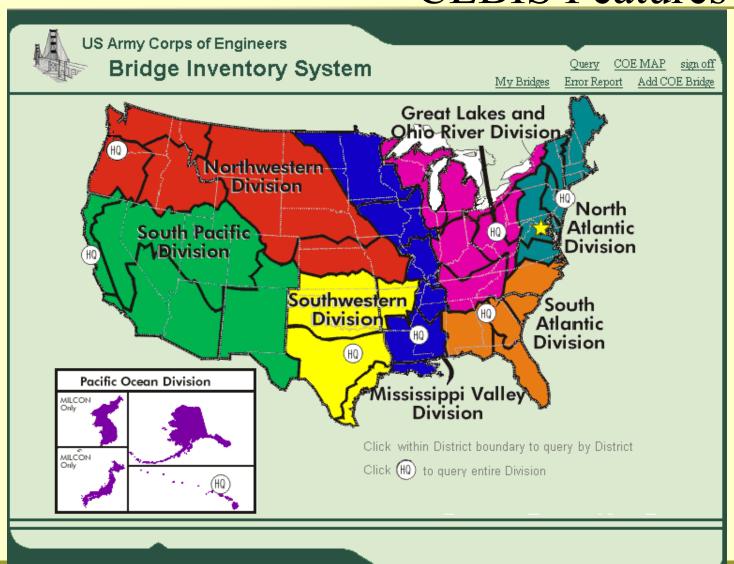


Considerations

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Considerations

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ADD/DELETE RECORDS

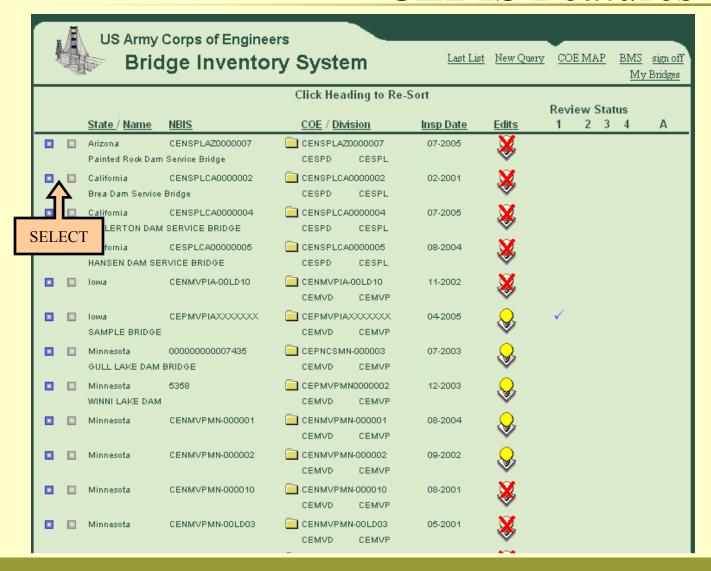


Considerations

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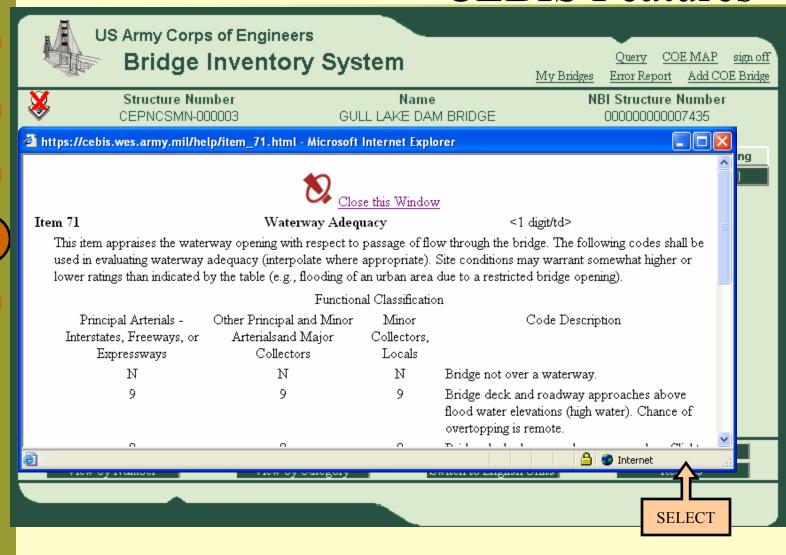


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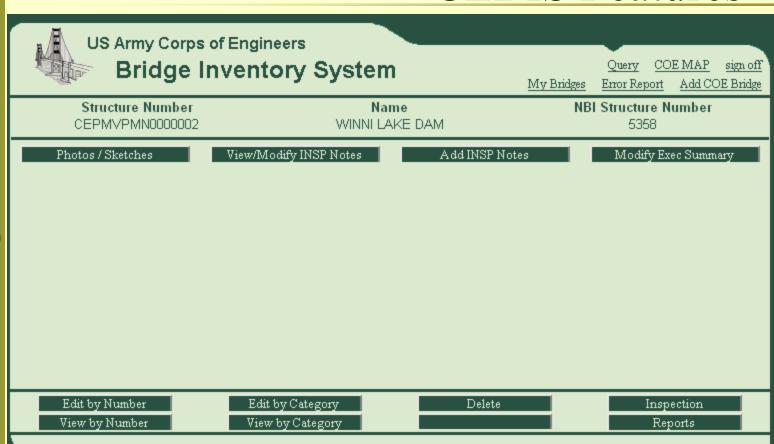


Considerations

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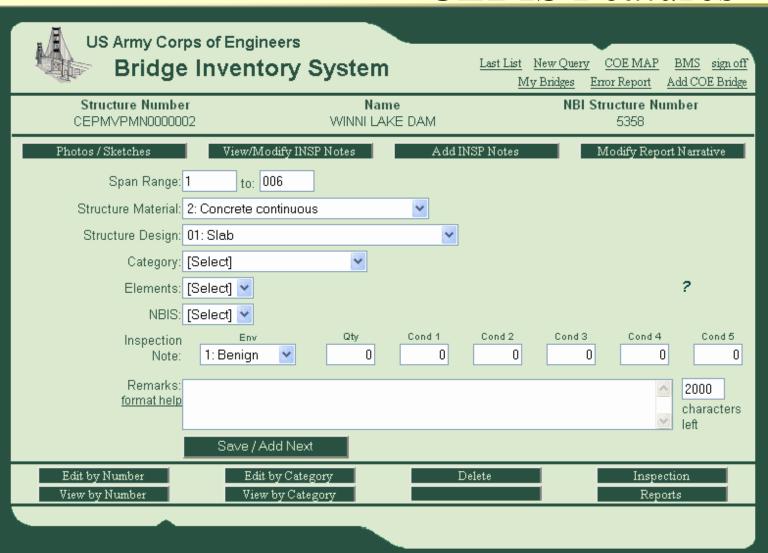


Considerations

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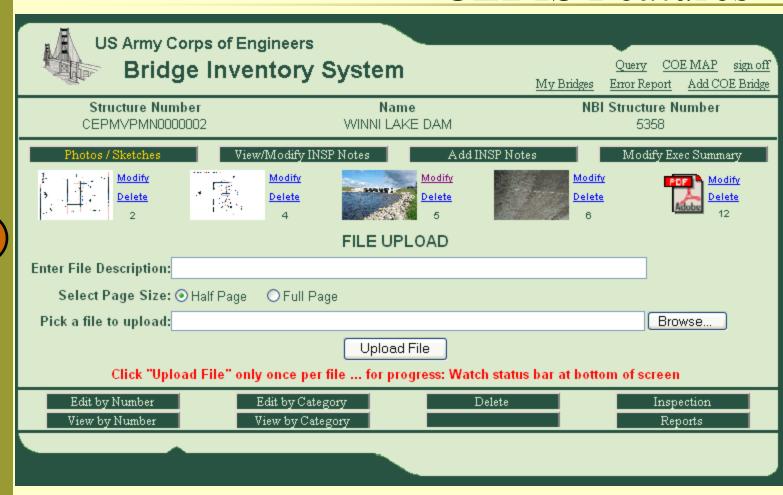


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US Army Corps of Engineers Bridge Inventory System Query COE MAP sign off My Bridges Error Report Add COE Bridge		
Structure Number CEPMVPMN000000		NBI Structure Number NM 5358
Photos / Sketches	View/Modify INSP Notes	Add INSP Notes Modify Exec Summary
1. Summary of Inspection:		
2. Summary of Findings:		
3. Previous Inspection Findings and Recommendations:		
4. Recommendations:		
5. Evaluation Summary(s):		
	Update Exec Sum	mary



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COE MAP sign off

Structure Number CEPNCSMN-000002

Name Winni Lake Dam **NBI Structure Number** CEPNCSMN-000002

SI&A by category

SI&A by number Inspection Notes Exec Summary

Inspection Report

Approval Status

Phil Sauser

Bridge Inspection Team Leader

09-NOV-2004

(Date)

Phil Sauser

Technical Review Team Leader

09-NOV-2004

(Date)

Phil Sauser

Chief, Engineering Division

09-NOV-2004

(Date)

Phil Sauser

MSC / Division

09-NOV-2004

(Date)

View Comments

View by Number

View by Category

Switch to English Units

Reports



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CEBIS Features

INSPECTION REPORT



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CEBIS Features

QC/QA



Considerations

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CEBIS Features

DATA REPORTING



Considerations

Implementation

CEBIS

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CEBIS Features

TRACKING/TRENDS



Considerations

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Archival



Considerations

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Bridge Inspection Reporting System

