ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0004512, Cobb-Fulton Counties
CM-0004-00(512)
Hemi's Bridge at Chattahoochee River

OFFICE Preconstruction

DATE July 20, 2007

FROM Genetha Rice-Singleton, Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT **APPROVED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

Brian Summers
Glenn Bowman
Ken Thompson
Michael Henry
Keith Golden
Mike Lobdell
Angela Alexander
Paul Liles
Bryant Poole
BOARD MEMBER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: P.I. No. 0004512, Cobb-Fulton Counties
CM-0004-00(512)
Hermi's Bridge at Chattahoochee River

OFFICE: Preconstruction

DATE: July 10, 2007

FROM: Genetha Rice-Singleton, Assistant Director of Preconstruction

TO: David E. Studstill, Jr., P.E., Chief Engineer

SUBJECT: ***PROJECT CONCEPT REPORT***

This project is the rehabilitation of an existing pedestrian bridge (Hermi's Bridge) along Paces Ferry Road over the Chattahoochee River. Hermi's Bridge was constructed over the Chattahoochee River to connect Vinings to Buckhead in 1903. This bridge and associated roadway replaced the existing ferry. In 1972, Hermione Alexander campaigned to save the old truss bridge when the new bridge over the river was built adjacent to it. After Hermione death in the early 1980's, the bridge was named after her. Since the early 1970's, this bridge has formed a viable and well-used pedestrian connection across the Chattahoochee River along Paces Ferry Road. In the past couple of years, the condition of the bridge has deteriorated rapidly, causing it to be closed to pedestrian traffic. Since that time, pedestrians have been using the narrow shoulder of the Paces Ferry Road bridge or moving the barrels and caution tape and using Hermi's bridge.

The project proposes to correct deficiencies of the existing bridge through the use of a redundancy system or welded steel plates at selected locations throughout the truss system. The redundancy will be achieved through a system of cables incorporated within the structure along the tension members. The welded plates would be hidden when possible to minimize impacts to the bridge architecture and may result in significant savings over the cable redundancy system because of the simplification of construction. Testing during the design phase of the project will be analyzed to determine the most cost effective construction method. The existing paint is lead-based, which will be removed in accordance with Georgia DOT specifications. The existing railing does not meet height requirements of AASHTO and will be replaced. In several locations the timber deck shows sign of deterioration and decay and the effected members will be repaired or replaced. Pier corrosion has resulted in section lost near the bottom of the columns. Either concrete encasement or complete replacement of the column with a new reinforced concrete column can be used for repair and strengthening.

P.I. No. 0004512, Cobb-Fulton Counties
July 10, 2007

Environmental concerns include requiring a COE 404 permit; Categorical Exclusion will be prepared; a Public hearing is not required; Time saving procedures is appropriate.

The estimated costs for this project are:

	PROPOSED	APPROVED	FUNDING	PROG DATE
Construction (includes E&C)	$ 503,000	$ 400,000	L400	2008
Right-of-way & utilities*	Local	Local		

* PMA sent requesting Fulton County is responsible for PE, right-of-way, utilities and 20% of construction/ Cobb County signed PMA on 10-23-06 for PE and utilities; right-of-way and construction to be done by future agreements.

I recommend this project concept be approved.

GRS: JDQ

Attachment

CONCUR _____
Todd I. Long, P.E., Director of Preconstruction

APPROVED _____
David E. Studstill, Jr., P.E., Chief Engineer

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
0004512	Cobb, Fulton	HERMIS BRIDGE @ CHATTAHOOCHE RIVER NEAR WEST PACES FERRY			Mar-08

CM-0004-00(512) **FIELD DIST:** 7
TIP #: CO-370 **TWIN:** **US:**
MPO: Atlanta TMA **EST DATE:** 3/7/06
MODEL YR: 2010
PROJ MGR: Lobdell, Mike **PROJ LENGTH:** 0.40
PROG TYPE: Enhancement **TYPE WORK:** Bicycle/Ped Facility
CONCEPT: BIKE/PED **LET RESP:** LOC Congressional Districts: 5, 6

Phase	Approved	Proposed	Cost	Fund	Status
PE	LOCL	LOCL	100,000.00	LOC	PRECST
CST	2008	2008	400,000.00	L400	PRECST

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	1/22/07	4/13/07	100	FULTON CO. (3-26-03) PMA TO
		Concept Meeting	4/20/07	4/20/07	100	OFM 3/27/03. (11/13/03) NO
7/6/07	8/2/07	Concept Submittal and Review			0	ACTIVITY. LOCALS RE-
8/3/07	8/16/07	Receive Preconstruction Concept Approval			0	ASSESSING. (5/13/04) NO
8/16/07	**8/16/07**	**Management Concept Approval Complete**			**0**	ACTIVITY. (9/1/04) PMA
8/17/07	4/25/08	Environmental Approval			0	FOLLOW-UP LTR. SENT.
8/17/07	**1/3/08**	**Preliminary Design**			**0**	(11/30/04) MOVING TO 06 CST.
4/28/08	7/18/08	R/W Plans Preparation			0	(2/28/05) NEED CONCEPT &
9/15/08	**9/18/08**	**R/W Plans Final Approval**			**0**	SCHEDULE. (3/10/05) LEAD
4/28/08	4/30/08	L & D Report Development and Approval			0	PAINT ON BRIDGE; GDOT
9/19/08	1/23/09	R/W Acquisition			0	CONDUCTING UNDERWATER
7/24/08	**12/10/08**	**Final Design**			**0**	TEST ON STRUCTURE. (4/18/05)
12/15/08	12/15/08	FFPR Inspection			0	JULY 06 CST.(5/12/05)
12/23/08	1/5/09	FFPR Response			0	AWAITING CONCEPT &
						SCHEDULE.(6/1/07) CTM HELD
						4/20/07.

BIKE PROVISIONS INCLUDED?: N **MEASUREMENT** E **CONSULTANT:** L **UT EST:**

PDD: NOV02 Board App: Assigned to District 7. 1/29/03.
Bridge: BRIDGE REQUIRED - HISTORIC TRUSS PEDESTRIAN BRIDGE
Design: MC/KC NEED CONCEPT
EIS: NP | LR | COX
LGPA: PMA REQ FULTON DO PE|ROW|UTIL & 20% CST 3-31-03|PMA SGN COBB DO PE & UTIL|ROW & CST TO BE DONE BY FUTURE AGREEMENTS 10-23-06.
Utility: CC: NEED CERT. LTR. FM LOCALS 11/06
EMG: BIKE/PED FACILITY ENHANCEMENT

R/W INFORMATION:
PREL PARCEL CT: **TOTAL PARCEL CT:** **ACQUIRED BY:** N/R **ACQ MGR:**
UNDER-REVIEW CT: **RELEASED** **OPT-PEND CT:** **DEEDS CT:** **COND-PEND CT:** **COND-FILED CT:**
RW CERT DT: **ACQUIRED CT:** **RELOCATION CT:**

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(512)
County: Cobb/Fulton
P. I. Number: 0004512
Hemmi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: _____ State Transportation Planning Administrator

DATE: _____ State Transportation Financial Management Administrator

DATE: _____ State Environmental/Location Engineer

DATE: _____ State Traffic Safety and Design Engineer

DATE: 7/13/07 _____ Project Review Engineer

DATE: _____ State Bridge & Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(512)
County: Cobb/Fulton
P. I. Number: 0004512
Hermi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: _____ State Transportation Planning Administrator

DATE: _____ State Transportation Financial Management Administrator

DATE: _____ State Environmental/Location Engineer

DATE: _____ State Traffic Safety and Design Engineer

DATE: _____ Project Review Engineer

DATE: 7/2/07 _____ State Bridge & Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(512)
County: Cobb/Fulton
P. I. Number: 0004512
Hermi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: 6/20/07 _____ State Transportation Planning Administrator

DATE: _____ _____ State Transportation Financial Management Administrator

DATE: _____ _____ State Environmental/Location Engineer

DATE: _____ _____ State Traffic Safety and Design Engineer

DATE: _____ _____ Project Review Engineer

DATE: _____ _____ State Bridge & Structural Design Engineer

6-15-07

WCB

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(512)
County: Cobb/Fulton
P. I. Number: 0004512
Hermi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: _____ State Transportation Planning Administrator

DATE: 6-19-07 _____ ~~State Transportation~~ Financial Management Administrator

DATE: _____ State Environmental/Location Engineer

DATE: _____ State Traffic Safety and Design Engineer

DATE: _____ Project Review Engineer

DATE: _____ State Bridge & Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: **P.I. No. 0004512** **OFFICE:** Environment/Location

DATE: June 26, 2007

FROM: Harvey D. Keepler, State Environmental/Location Engineer

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

SUBJECT: **PROJECT CONCEPT REPORT**
CM-0004-00(512) / Fulton and Cobb Counties
Hermi'S Bridge at Chattahoochee River

The above subject concept report has been reviewed. Bridge is Historic. Therefore, work must be done in accordance with Secretary of Interior standards to avoid adverse effect under Section 106 and to avoid Section 4f.

If you have any questions, please contact me at (404) 699-4401.

HDK/lc

Attachment

cc: Brian Summers
Bryant Poole
Keith Golden
Angela Alexander
Jamie Simpson
Paul Liles

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(312)
County: Cobb/Fulton
P. I. Number: 0004512
Hemi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: _____ State Transportation Planning Administrator

DATE: _____ State Transportation Financial Management Administrator

DATE: 6.25.07 _____ State Environmental/Location Engineer

DATE: _____ State Traffic Safety and Design Engineer

DATE: _____ Project Review Engineer

DATE: _____ State Bridge & Structural Design Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number:	**County:**	**PI No.:**
CM-0004-00(512)	Fulton	0004512

Report Date:	**Concept By:**
June 13,2007	DOT Office: District 7
	Consultant- PBS&J
☒ Concept Stage	

Project Type: Choose One From Each Column			
	☐ Major ☒ Minor	☒ Urban ☐ Rural	☐ ATMS ☐ Bridge Replacement ☐ Building ☐ Interchange Reconstruction ☐ Intersection Improvement ☐ Interstate ☐ New Location ☐ Widening & Reconstruction ☒ Miscellaneous

FOCUS AREAS	SCORE	RESULTS
Presentation	100	
Judgment	100	
Environmental	100	
Right of Way	100	
Utility	100	
Constructability	100	
Schedule	100	

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
GDOT – District 7
Project Concept Report

Project Number: CM-0004-00(512)
County: Cobb/Fulton
P. I. Number: 0004512
Hermi's Bridge at Chattahoochee River
Federal Route Number: NA
State Route Number: NA

(See following page for Location Map)

Recommended for approval:

DATE: 6/12/07 _____ Project Manager

DATE: 6/13/07 _____ District Engineer

This concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE: _____ State Transportation Planning Administrator

DATE: _____ State Transportation Financial Management Administrator

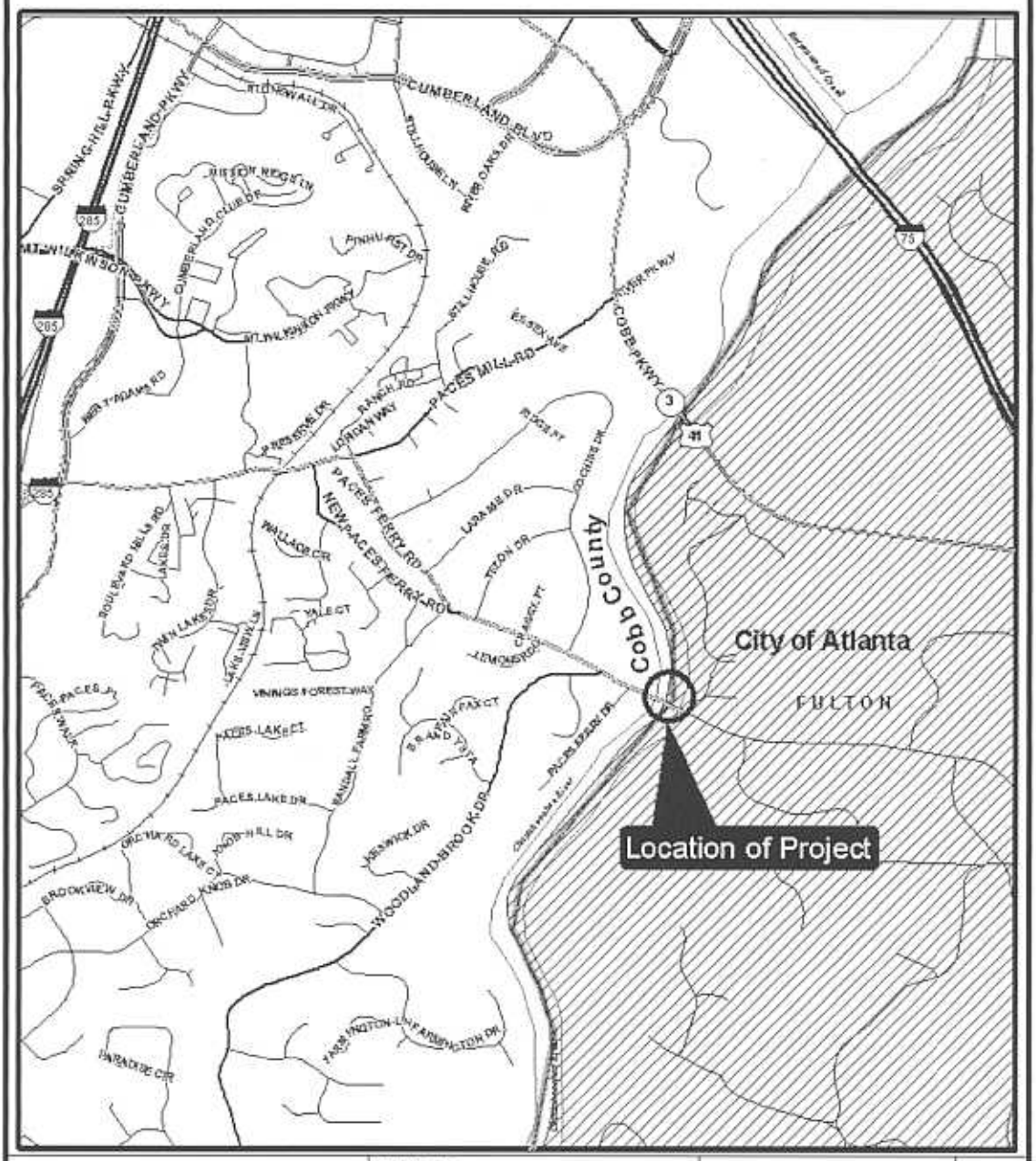
DATE: _____ State Environmental/Location Engineer

DATE: _____ State Traffic Safety and Design Engineer

DATE: _____ Project Review Engineer

DATE: _____ State Bridge & Structural Design Engineer

LOCATION MAP



Cobb County Department of Transportation	PROJECT: Hermi's Bridge at Chattahoochee River CM-004-00(152), Cobb Co. P.I. No. 0004512	DATE: April 25, 2007	

Notes: 1" = 1500'

NEED AND PURPOSE

Background

Hermi's Bridge was constructed over the Chattahoochee River to connect Vinings with Buckhead in 1903. This bridge and associated roadway replaced the existing ferry. In 1972, Hermione Alexander campaigned to save the old steel truss bridge when the new bridge over the river was built adjacent to it. After Hermione was killed by a drunk driver in the early 1980's, the bridge was named after her.

In the past several years, the bridge has deteriorated to a point where it is hazardous for pedestrians making the crossing. The timber decking is in poor shape in several places and despite cordoning off the bridge and placing barricades, pedestrians continue to bypass these warnings and use the bridge because of the inadequate pedestrian facilities on the adjacent roadway bridge.

Several years ago, Fulton County applied for and received Federal funding to improve the safety and condition of the old bridge. After receiving funding approval, it was determined that the Fulton County side of the bridge was within the Atlanta City Limits.

In an agreement with Fulton County in 2006, Cobb County took over as sponsor for this project and established a partnership between the City of Atlanta and the PATH Foundation to establish the necessary matching funding and design fee that would be required for the project.

Deficiencies

The current bridge is being used despite the barriers and tape that have been placed to discourage pedestrian traffic. This bridge remains an important pedestrian link because of the inadequate provisions on the adjacent Paces Ferry Road bridge. Deficiencies to the existing bridge that will need to be investigated and repaired include:

Consistency with Other Plans

This project is included in the TIP with no other significant projects in the immediate vicinity. Two local projects, one by Cobb County and the other by the City of Atlanta, will construct a sidewalk from the existing bridge to the existing sidewalk connection. These two sidewalk connections will be about 200' each.

Need &Purpose

Since the early 1970's, this bridge has formed a viable and well-used pedestrian connection across the Chattahoochee River along Paces Ferry Road. In the past couple of years, the condition of the bridge had deteriorated rapidly, causing it to be closed to pedestrian traffic. Since that time, pedestrians have been using the narrow shoulder of the Paces Ferry Road bridge or moving the barrels and caution tape and using the bridge. Corrections to the deficiencies of the existing bridge will lead to allowing Hermi's Bridge to once again be open to pedestrians.

Construction of these improvements and the two local sidewalk projects on each side of the bridge will complete a missing link in the sidewalk network between downtown Vinings to the Lovett School (on the east side of the river) and beyond. Re-establishing this vital pedestrian link and making it attractive as an alternative means of transportation will result in an overall reduction of pollution and congestion in the vicinity.

Not included in this project, but important to the connectivity this bridge will provide includes the construction of about 200 feet of concrete sidewalk on each side of the bridge to connect it to the existing pedestrian facilities and entrance to the Lovett School on the east side of the river. These projects will be constructed by Cobb County, the City of Atlanta and the PATH Foundation.

DESCRIPTION OF THE PROPOSED PROJECT

Corrections to the deficiencies of the existing bridge from the above section will lead to allowing Hermi's Bridge to once again be open to pedestrians. The fatigue life of the bridge and components cannot reliably be determined and fatigue cracks in critical tension members would require the bridge to be taken out of service, and in the extreme cause structural collapse. Thus it is necessary to provide a redundancy system for the tension members. This redundancy will be achieved through a system of cables incorporated within the structure along the tension members. The cable system along the bottom chord and the outer four diagonals of each truss (i.e. the last two diagonals on each end of the truss) appears to be the best solution. Such a system will be internal and "hidden" within the bridge structure and would not significantly impact the bridge's aesthetics.

Another alternative that will likely be used in design in place of the proposed cable system, or as a complement to it, will be welded steel plates at selected locations throughout the truss structure. These welded plates would be hidden when possible to minimize impacts to the bridge architecture and may result in significant savings over that in the cable redundancy system because of the simplification of construction. Testing during the design phase of this project will be analyzed to determine the most cost effective construction method.

The bridge improvements include other components as well. The existing paint on Hermi's Bridge is lead-based, which will have to be removed in accordance with Georgia DOT specifications. The existing railing does not meet the height requirements of AASHTO and will be replaced. In several locations the timber deck shows signs of deterioration and decay and the affected members will be repaired or replaced. Pier corrosion has resulted in section loss near the bottom of columns. Either concrete encasement or complete replacement of the column with a new reinforced concrete column can be used for repair and strengthening. The column's existing steel plate cladding will be removed, repainted, and repaired as needed. Then the cladding would be placed back onto the columns. To make a decision of which method to use for column rehabilitation will require an inspection to assess the extent of the corrosion. This will be done as part of the testing to be performed on the bridge prior to completion of construction plans.

Not included in this project, but important to the connectivity this bridge will provide includes the construction of about 200 feet of concrete sidewalk on each side of the bridge to connect it to the existing pedestrian facilities and entrance to the Lovett School on the east side of the river. These projects will be constructed by Cobb County, the City of Atlanta and the PATH Foundation.

Is the project located in a Non-attainment area? ☒ **Yes** ☐ **No**
The proposed project concept matches the conforming plan's model description. The project limits include modifications on the bridge only. The proposed changes are scheduled to be open to pedestrian traffic early in 2008.

PDP Classification: Major ☐, Minor ☒

Federal Oversight: Full Oversight ☐, Exempt ☒, State Funded ☐, or Others ☐

Functional Classification: NA (Pedestrian Bridge)

U. S. Route Number(s): NA **State Route Number(s):** NA

Traffic (AADT): NA

Existing Design Features:

- Typical Section: Existing bridge is approximately 16 feet wide
- Posted Speed: 45 MPH on Paces Ferry Road (parallel with pedestrian bridge)
- Width of right of way: Hermi's Bridge is included in the 100' existing R/W along Paces Ferry Road.
- Major structures: Hermi's Bridge over Chattahoochee River
- Major interchanges or intersections along the project: NA
- Existing length of roadway segment and the beginning mile logs: Existing bridge length is 140 feet. No Mile Logs on this roadway.

Proposed Design Features:

- Proposed typical section(s):
  Work to be completed within the existing 16 foot bridge width
- Proposed Design Speed Mainline: 45 mph on Paces Ferry Road (parallel with pedestrian bridge)
- Proposed Maximum grade Mainline NA Maximum grade allowable NA
- Proposed Maximum grade Ramps NA Maximum grade allowable NA
- Proposed Maximum grade Sidestreets (Arterials) NA Maximum grade allowable NA
- Proposed Maximum grade Sidestreets (Collectors) NA Maximum grade allowable NA
- Proposed Maximum grade driveway NA Maximum grade allowable NA
- Proposed Minimum radius of curve, NA Minimum radius allowable NA'
- Proposed maximum super-elevation rate for curve: NA
- Right of way
  - Mainline: All work within existing R/W, no additional R/W or easements required
    - Easements: NA
  - Number of parcels 0 Number of displacements:
    - Business: 0
    - Residences: 0
    - Mobile Homes: 0
    - Other: 0
- Structures:
  - Bridges: Hermi's Bridge

  Improvement Include:
  - Remove Existing lead-based paint and repaint bridge
  - Remove and replace existing handrail
  - Remove and replace steel components as needed
  - Remove and replace timber decking as needed
  - Rehabilitate or replace substructure
  - Install a redundancy system to mitigate failure risk
  - Traffic control during construction: No significant traffic control will be required during construction

- Design Exceptions to controlling criteria anticipated:

	UNDETERMINED	YES	NO
HORIZONTAL ALIGNMENT:	☐	☐	☒
ROADWAY WIDTH:	☐	☐	☒
SHOULDER WIDTH:	☐	☐	☒
VERTICAL GRADES:	☐	☐	☒
CROSS SLOPES:	☐	☐	☒
STOPPING SIGHT DISTANCE:	☐	☐	☒
SUPERELEVATION RATES:	☐	☐	☒
HORIZONTAL CLEARANCE	☐	☐	☒
SPEED DESIGN:	☐	☐	☒
VERTICAL CLEARANCE:	☐	☐	☒
BRIDGE WIDTH:	☐	☐	☒
BRIDGE STRUCTURAL CAPACITY:	☐	☐	☒

- Design Variances: None
- Environmental concerns:

Level of environmental analysis:

- Are Time Saving Procedures appropriate? Yes ☒, No ☐
- Categorical Exclusion (Possible Programmatic CE): ☒ Anticipated
  - Documents: Historic Resources, Ecology

Utility involvement: None Anticipated

Project responsibilities:

- Design, Cobb County DOT (PBS&J as consultant)
- Right of Way Acquisition, None Anticipated
- Relocation of Utilities, None Anticipated
- Letting to contract, Cobb County DOT
- Supervision of construction, Cobb County DOT
- Providing traffic control, Cobb County DOT

Coordination:

- Initial Concept Meeting: April 20, 2007
- Concept Meeting: Anticipate waiving due to successful ICTM
- PAR Meeting: Not Required
- Public Involvement – Not required
- Local government commitments: Joint funding arrangement with Cobb County, the City of Atlanta, and the PATH Foundation to meet local match requirements.
- Other projects in area: no significant projects in vicinity
- Other coordination to date: None
- Railroads: None

Scheduling – Responsible Parties' Estimate

- Time to complete the Section 404 Permit: 3 to 4 Months.
- Time to complete environmental process: 3 to 6 Months.
- Time to complete preliminary construction plans: 2 Months.
- Time to complete right of way plans: NA
- Time to complete final construction plans: 1 Months.
- Time to complete to purchase right of way: NA
- List other major items that will affect the project schedule: None.

Alternates considered:

1) **Improvements to the existing bridge** to enhance it for safety and continuity of the existing pedestrian access in the area. This alternative was chosen because of the ability to maintain the majority of the historic structure in place, the least impact to the environment, the river, right-of-way or utilities, and the most cost effective solution. Cost estimate for this alternative is $502,000.
2) **Replacement of the existing structure.** This alternative was eliminated because of the loss of the historic structure, the impacts to the environment, community, right-of-way and utilities. The cost of replacement of this bridge was estimated to be $800,000.
3) **Reconstruction of the existing bridge, replicating its original design**. This would have similar impacts as replacement (above), but would increase the cost from $800,000 to $1,100,000.
4) **No Build** – eliminated due to need of this facility for pedestrian traffic and community support for providing improvements to the existing bridge that would make it once again safe for use.

Programmed Dates:

- Right of Way: NA
- Construction: 2008

Comments: None

Attachments:

1. Cost Estimates (Alternative 1 only)
2. Initial Concept Team Meeting Sign-In Sheet
3. Minutes of Concept Team Meeting (4-20-07)
4. Lead Paint Survey Results (May 14, 2005)
5. Underwater Inspection Report (May 17, 2005)
6. PBS&J Hermi's Bridge – Analysis Preliminary Report, 7-20-06

Estimate Report for file "Hermis Bridge over Chattahoochee River"

Section Bridge Items					
Item Number	**Quantity**	**Units**	**Unit Price**	**Item Description**	**Cost**
500-3200	80	CY	619.88	CLASS B CONCRETE	49590.40
501-xxxx	16000	LB	1.03	Reinf. (Substructure)	16480.00
501-xxxx	4791	LF	4.25	Cables (Including Installation)	20361.75
502-xxxx	14	MBM	5586.66	Bridge Timber, Treated	78213.24
515-2020	740	LF	45.00	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND	33300.00
525-1000	3	EA	40000.00	COFFERDAM	120000.00
535-xxxx	12292	SF	15.00	Lead Paint Removal & Repaint	184380.00
				Section Sub Total:	**$502,325.39**

Total Estimated Cost: $502,325.39

Georgia Department of Transportation
DISTRICT SEVEN PRECONSTRUCTION

MEETING/CONFERENCE RECORD OF ATTENDEES

Purpose: Initial Concept Team Meeting, CM-0004-00(512), Hermis Bridge Rehab Cobb County, P.I. 0004512

Location: District Seven Preconstruction Conference Room,
Date: April 20, 2007 **Hour:** 10:30 PM **Moderator:** Lowell James

	Name	Organization	Telephone	Email Address
1.	Lowell James	GDOT	77-986-1257	lowell.james@dot.state.ga.us
2.	Merishia Robinson	"	"	merishia.robinson@dot.state.ga.us
3.	Mike Lobdell	"	770-986-1257	mike.lobdell@...
4.	Scott Lee	"	770-986-1261	Scott.Lee@DOT....
5.	Daniel McDuff	PBS&J (Cobb)	770-528-1635	daniel.mcduff@cobbcounty.org
6.	Barry Brown	PBS&J	770-933-0280	blbrown@pbsj.com
7.	Henry Borovich	PBSJ	" "	hborovich@pbsj.com
8.	Joe McGrew	PBS&J	678 247 2481	Jpmcgrew@PBSJ.com
9.	Steve St. John	GDOT	404-635-8183	steve.st.john@dot.state.ga.us
10.	ALEX LAFFEY	GDOT	770-986-1773	ALEX.LAFFEY@DOT.STATE.GA.US
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				

Initial Concept Team Meeting
Hermi's Bridge at Chattahoochee River
CM-0004-00(512), Cobb County; PI No. 0004512
April 20, 2007

INITIAL CONCEPT TEAM MEETING MINUTES

Date: April 20, 2007 Time: 10:30 am

Location: GDOT District Seven, Pre-Construction Conference Room

Subject: Hermi's Bridge at Chattahoochee River

Project No: CM-0004-00(512), PI No. 0004512, Cobb County

Recorded By: Daniel McDuff for Cobb County DOT

Attendees	Organization	Phone	email
Lowell James	GDOT	(770) 986-1257	Lowell.james@dot.state.ga.us
Mike Lobdell	GDOT	(404) 463-4947	Mike.lobdell@dot.state.ga.us
Scott Lee	GDOT	(404) 463-4947	Scott.lee@dot.state.ga.us
Merishia Robinson	GDOT	(770) 986-1257	Merishia.robinson@dot.state.ga.us
Steve St. John	GDOT	(404) 635-8183	Steve.stjohn@dot.state.ga.us
Alex Laffey	GDOT	(770) 986-1773	Alex.laffey@dot.state.ga.us
Daniel McDuff	CobbDOT	(770) 528-1635	Daniel.mcduff@cobbcounty.org
Barry Brown	PBS&J	(770) 933-0280	blbrown@pbsj.com
Joe McGrew	PBS&J	(678) 247-2481	jpmcgrew@pbsj.com
Henry Borovich	PBS&J	(770) 933-0280	hborovich@pbsj.com

The purpose of this meeting was to hold the Initial Concept Team Meeting for the Hermi's Bridge at Chattahoochee River and work out some of the details for delivery of this unique project.

1. After introductions, Barry Brown of PBS&J (lead designer) distributed handouts and described the historical elements of the existing bridge. From research at the Atlanta Historical Society, they were able to find the original engineering drawings for the bridge from the early 1900's and the rehabilitation plans from 1915. Finding the drawings allowed PBS&J to accurately model the existing structure of the bridge.
2. Barry discussed the 4 alternatives evaluated during the Concept phase, which included improvements to the existing bridge, replacement of the existing structure, reconstruction of the existing bridge (replicating the original design) and the No-Build alternative, which would really require demolition of the existing bridge because of safety reasons.
3. Barry discussed the condition of the existing structure, pointing in particular to areas of the truss system that most likely will need a redundancy system installed to protect from catastrophic failure. The redundancy system would either be a cable system or welded steel plates. Additional improvements to the bridge

would probably include lead-based paint removal and repaint, possible concrete encasement of the existing pier into the river, and deck replacement where necessary. The structural elements of this project will require geotechnical material testing to properly ascertain the condition of the existing bridge and its connections. This testing will begin immediately after completion of the Concept phase.

4. Henry Borovich of PBS&J (Environmental) led a discussion into the environmental studies that would be required for the approval of a Categorical Exclusion on this project. This would most likely be a Programmatic CE. Environmental studies would primarily focus on history and ecology. Concurrence with the State Historic Preservation Office that these improvements would create no adverse affect and a probably 404 permit would be required. It will be important to carefully monitor the lead-based paint removal during construction to protect the waterway. Additional coordination will probably be required with the RiverKeepers and the National Park Service. If SHPO did not approve the current plan, the alternative would be cost prohibitive within the existing budget.
5. Scheduling of the project was discussed with Cobb County expressing their desire to let this project late in 2007. Although a very aggressive schedule, it was thought that with environmental approval, this was possible. Cobb explained the joint-funding of this project for local match by Cobb County, the City of Atlanta and the PATH Foundation. Project cost that exceeds the current budget may create funding issues on construction. PBS&J/Cobb County will submit a proposed schedule to the District so that a Let Date for the project can be established.
6. Bridge review was discussed with Steve St. John of the Bridge Office. They said they would handle review of the project in conjunction with the Bridge Maintenance Office.
7. Merishia Robinson of GDOT will be the liaison on this project and all information should go through her.

PSI Information To Build On
Engineering • Consulting • Testing

March 14, 2005

Mr. Ron Morris
PBS&J
5665 New Northside Drive NW
Atlanta, Georgia 30328

Re: Lead Based Paint Sampling and Testing
Fulton County Project Number T160
Paces Ferry Abandoned Bridge
PSI Project Number: 513-4A011

Dear Mr. Morris:

Professional Service Industries, Inc. (PSI) is pleased to inform you of our findings for the above referenced project. The project encompassed the abandoned bridge over the Chattahoochee River located on Paces Ferry Road and included surveys for lead-based paint (LBP), with the site visit being conducted on January 19, 2005. PSI's Mr. Christopher M. Hundley, an EPA accredited lead paint inspector, performed the survey.

LEAD PAINT SURVEY

The lead paint survey was conducted in general accordance with the U. S. Department of Housing and Urban Developments (HUD) Publication: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, June 1995. The paint was tested by the collection and analysis of paint chip sampling. A total of ten (10) paint chip samples were collected for analysis by the recommended Flame Atomic Absorption Spectrometry analytical method (SW846 Method 7420). Laboratory test results of 0.5% lead by weight or greater are considered positive under these guidelines. The following painted components were sampled:

- Green Truss Work (2.1% and 1.9% lead by weight), samples 001 and 008.
- Green Handrails (3.7% and 1.7% lead by weight), samples 002 and 009.
  Green Upper Support Beams (1.8% and 1.4% lead by weight), samples 003 and 010
  Green Angle Supports (2.2% lead by weight), sample 004.
  Green Round Support Column under bridge (1.4 lead by weight), sample 005.
- Green I-Beam under bridge (1.5 lead by weight), sample 006.
  Green Support Beam under bridge (1.5 lead by weight), sample 007.

RECOMMENDATIONS

Surfaces coated with lead-based paint can be painted over and encapsulated, where practical. However, for areas containing damaged paint, the surfaces may need to be prepared prior to repainting. For surfaces that will be scraped by mechanical means to remove loose or flaking paint, control measures should be established to capture loose paint. If chemical stripping techniques are to be utilized, precautions should be taken to

properly collect the paint/stripper waste.

Waste resulting from chemical stripping lead-based paint is likely to result in the requirement for disposal in a hazardous waste facility. All lead paint and debris, whether from chemical or mechanical removal from its substrate, or whole component removal, must be tested to determine proper disposal. Waste characterization testing should be performed on all materials prior to making a disposal decision. Waste with a Toxicity Characteristic Leachate Procedure (TCLP) result of greater than 5 parts per million (ppm) must be disposed of in a hazardous waste facility licensed to accept it.

The contractor must comply with U.S. Occupational Safety and Health Administration (OSHA) Regulations to protect workers from lead and chemical stripping compound exposure. Trained lead abatement contractors should be used to remove, containerize, label, and dispose of lead paint.

Additionally, OSHA requires that a negative exposure assessment be taken for workers conducting renovation/demolition activities on surfaces coated with any detectable level of lead (including any level below 0.5% by weight). This is accomplished by conducting personal air monitoring over a work shift to obtain an eight-hour time weighted average (TWA) to ensure workers are not being exposed to airborne lead concentrations above the permissible exposure limit (PEL).

Based on the tasks undertaken for the LBP testing survey, PSI has developed the following conclusions and recommendations:

1. LBP in poor condition was found to be present as a result of this investigation.
2. LBP abatement (i.e., removal and disposal) should be scheduled prior to renovation activities, if the renovation activities will impact the LBP.
3. Specifications for LBP abatement and abatement activities should follow current EPA and OSHA guidelines. Air monitoring during the abatement and clearance wipe samples after completion of the abatement should be collected.

WARRANTY

The field and laboratory results reported herein are considered sufficient in detail and scope to determine the presence of accessible and/or exposed LBP at the facility. PSI warrants that the findings contained herein have been prepared in general accordance with accepted practices as applied by similar professionals in the community. Changes in the state of the art or in applicable regulations cannot be anticipated and have not been addressed in this report.

The survey and analytical methods have been used to provide the client with information regarding the presence of accessible and/or exposed LBP existing in the facility at the time of inspection. Test results are valid only for the materials tested. There is a distinct possibility that conditions may exist which could not be identified within the scope of the study or which were not apparent during the site visit. The inspection covered only those areas that were exposed and/or physically accessible to the inspector. The study is also limited to the information available from the client at the time it was conducted.

No other warranties are implied or expressed.

PSI appreciates the opportunity to have been of service to you. If you have any questions regarding our findings, please do not hesitate to give us a call.

Sincerely,
PROFESSIONAL SERVICE INDUSTRIES, INC.

Christopher M. Hundley
Principal Consultant

Jerold T. Greeby
Environmental Service Manager

Enclosures: Analytical Data

PSI Information To Build On
Engineering • Consulting • Testing

Analytical Report
Analysis of Paint for Lead Determination

TESTED FOR: PSI, Inc
95 Chastain Road Suite 301
Kennesaw, GA 30144
Attn: Chris Hundley

Project ID: 513-4A011
Fulton County
Paces Ferry Bridge
Atlanta, GA

Date Received: 1/20/2005 Date Analyzed: 1/20/2005 Date of Issue: 1/21/2005

Analyst: LM

1 of 1

Lab Sample #	Client Sample #	% Lead by Weight	Reporting Limit % Lead by Weight
001A	001	2.1	0.00060
002A	002	3.7	0.00060
003A	003	1.8	0.00080
004A	004	2.2	0.00080
005A	005	1.4	0.00060
006A	006	1.5	0.00030
007A	007	1.5	0.00040
008A	008	1.9	0.00080
009A	009	1.7	0.0010
010A	010	1.4	0.00050

Analytical Method: EPA SW846 7420, 3rd Edition, Nov. 1986
Analysis was performed by flame AA using a PE 3110.

Reporting limit = 30µg Pb per representative subsample.

Results are based on a representative subsample of the total sample submitted by the client.

AIHA #100373; NY#10930; CA #2377.

All results are based on 2 significant figures. Results relate only to items tested.

Respectfully submitted,
PSI, Inc.

Approved Signatory
Glynnis Bowman

0501469

CHAIN OF CUSTODY RECORD

psi Information To Build On
Engineering • Consulting • Testing

PROJECT NAME: Fulton County, LBP Testing, Paces Ferry Bridge, Atlanta, GA	REPORT TO: PSI KENNESAW	INVOICE TO: SAME
PROJECT NUMBER: 512-4A011	PROJECT MANAGER: Chris Hundley	ADDRESS:
P.O. NUMBER: NA	ADDRESS: 93 CHASTAIN ROAD, SUITE 301	CITY/STATE/ZIP:
REQUIRED DUE DATE (MM-DD-YY): Standard TAT	CITY/STATE/ZIP: KENNESAW, GA 30144	ATTENTION:
SAMPLES TO LAB VIA: Federal Express	TELEPHONE: (770) 424-9700 FAX: (770) 424-9982	TELEPHONE:
NUMBER OF COOLERS: NA	REPORT VIA:	

RELINQUISHED BY/DATE/TIME	ACCEPTED BY/DATE/TIME	SEAL NUMBER
CHH 1/19/05 1730	1/20/05	

PARAMETER LIST

SAMPLE IDENTIFICATION	DATE/TIME	COMP-C GRAB-G	SOLS-S WATER-W WASTE-X	NUMBER OF CONTAINERS	PLM	TEM (AIR)	TEM (BULK)	FLAME AA (PAINT CHIP)	TCLP (LEAD)											
301-010				10				X												

ADDITIONAL REMARKS:

SAMPLER'S SIGNATURE: Chris Hundley

Department of Transportation

HAROLD E. LINNENKOHL
COMMISSIONER
(404) 656-5206

PAUL V. MULLINS
CHIEF ENGINEER
(404) 656-5277

Office of Maintenance
935 East Confederate Ave., Bldg. 24
Atlanta, GA 30316-2531

LARRY E. DENT
DEPUTY COMMISSIONER
(404) 656-5212

EARL L. MAHFUZ
TREASURER
(404) 656-5224

March 10, 2005

Honorable Sam Olens, Chairman
Cobb County Board of Commissioners
100 Cherokee Street, Suite 300
Marietta, Georgia 30090

Dear Commissioner Olens:

At the request of Mr. Roger Henry with Cobb County an inspection was made on the truss structure over the Chattahoochee River. This structure is a border bridge between Fulton and Cobb Counties and was inventoried as 121-09035M-000.00E when open to traffic.

The initial inspection revealed this structure to be in fair condition with surface corrosion throughout the structure. This visual inspection was performed on all members that were readily accessible. However, it is our recommendation that a complete in-depth inspection, using specialized access equipment, in conjunction with a load rate analysis, based on AASHTO pedestrian loads, be performed on this structure before consideration is given to opening it to pedestrians.

This inspection and analysis should be performed by qualified personnel employed by Cobb County or by a private engineering consulting firm.

If you have any questions, please contact Mr. Kerry Wood, of my office, at (404) 635-8189.

Sincerely,

Brian Summers, P.E.
State Bridge Maintenance Engineer

BKS:KWW
cc:file

F.A.S.

BRIDGE INVENTORY FORM

REPLACING ____ CO. NO. ____ S.R. ____ DIST. ____
REPLACED BY ____
ADDITIONAL ☐ REVISED ☐ DELETE ☐

FIELD DIVISION NO. ____ COUNTY NO. 060 COUNTY NAME Fulton STATE ROUTE NO. 1657

ODOMETER & ORIENTATION 00.03E U.S. HWY. NO. NONE FEDERAL ROUTE NO. NONE PROJECT NO. ____

BRIDGE CARRYING S.R. 1657 OVER Chattahoochee River VERTICAL CLEAR 27.0 OPEN NO GA. STD. NOS. ____

TYPE OF BRIDGE C.S.-S-T POSTED LOAD LIMIT 5 TONS DESIGN LIVE LOAD H10-H15 YEAR BUILT 1903+1904

BRIDGE LENGTH 368.1 SPAN LENGTHS 2@140.75, 3@17.5, 1@17.4, 1@17.2 EXP. JOINTS NONE ARMORED ☐ OTHER ☐

BRIDGE CULVERTS— STEEL ☐ CONCRETE ☐ TIMBER ☐ BARRELS (NO. SIZE) ____ LENGTH OF CULVERT ____

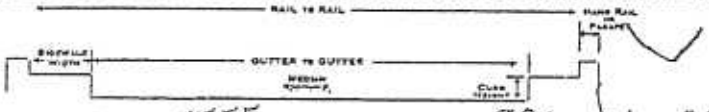
TRUSS ONLY
TYPE OF TRUSS DECK ☐ PONY ☐ KING POST ☐ THRU ☒ (KNEE-BRACED - YES ☒ NO ☐) MAXIMUM CLEARANCE 15.9
MINIMUM CLEARANCE 13.0 FABRICATORS NAME Cotton States Bridge Co. YEAR FABRICATED 1903+1904

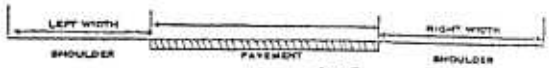
DELINEATORS YES ☐ NO ☒ HAZARD BOARDS YES ☒ NO ☐ SIGNS YES ☒ NO ☐ GUARD RAILS ATTACHED YES ☐ NO ☒

OVERLAY ASPH. ☒ CONC. ☐ THICKNESS .25 YEAR WIDENED NOT RIP RAP PLAIN ☐ SLOPE PAVING ☐ SANDBAG ☐ NONE

VEHICLE CAPACITY RATIO ____ A.A.D.T. 4328 % TRUCKS 3.6

REMARKS
outside BEAMS ARE CHANNELS





RAIL TO RAIL-W 15.55 GUTTER TO GUTTER-W 9.70 CURB-H .35
SIDEWALK-W NONE MEDIAN-H NONE MEDIAN-W NONE
HANDRAIL OR PARAPET-W 1.20 HANDRAIL TYPE-
AL ☐ CONC. ☐ S. ☒ T. ☐

LT. SHOULDER-W REAR NONE FWD NONE
RT. SHOULDER-W REAR 6.0 FWD NONE
PAVEMENT-W REAR 24.0 FWD 28.0
PAVEMENT TYPE ASP. ☒ CONC. ☐ NONE ☐

UTILITIES- GAS ☐ WATER ☐ ELEC. ☐ TEL. ☐ SEWER ☐
DIMEN. ( ) ( ) ( ) ( )
TOP ☐ BOT ☐ LT. ☐ RT. ☐ CENT ☐ NONE

SUBSTRUCTURE

UNITS	TYPE			FOUNDATION			COLUMNS			NO	PILING			NO	SWAYBR.		TYPE OF CAP			OTHER
	ABUT.	PIER	ST	PPT	SPT	MS	T.	S.	C.		T.	S.	C.		YES	NO	T.	S.	C.	
1	☒	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐		☐	☒	☐	☐	☒	
2	☐	☐	☒	☐	☐	☐	☐	☒	☐	2	☐	☐	☐		☒	☐	☐	☒	☐	
3	☐	☐	☒	☐	☐	☐	☐	☒	☐	2	☐	☐	☐		☒	☐	☐	☒	☐	
4	☐	☐	☒	☐	☐	☐	☐	☐	☒	2	☐	☐	☐		☒	☐	☐	☒	☐	
5	☐	☒	☐	☐	☐	☐	☐	☐	☒	2	☐	☐	☐		☒	☐	☐	☒	☐	
6	☐	☐	☒	☐	☐	☐	☐	☐	☒	2	☐	☐	☐		☒	☐	☐	☒	☐	
7	☐	☐	☒	☐	☐	☐	☐	☒	☐	2	☐	☐	☐		☒	☐	☐	☒	☐	
8	☒	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐		☐	☒	☐	☐	☒	
	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐		☐	☐	☐	☐	☐	

BEARINGS

UNITS	REAR				FWD				OTHER
	FL	ROCK	ROLL	HM	FL	ROCK	ROLL	HM	
1	☒	☐	☐	☐	☐	☐	☐	☐	
2	☐	☐	☐	☐	☐	☐	☐	☐	NONE
3	☐	☐	☐	☐	☐	☐	☐	☐	NONE
4	☐	☐	☐	☐	☐	☐	☐	☐	NONE
5	☐	☐	☐	☐	☐	☐	☐	☐	NONE
6	☐	☐	☐	☐	☐	☐	☐	☐	NONE
7	☐	☐	☐	☐	☐	☐	☐	☐	NONE
8	☐	☐	☐	☐	☒	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	☐	

MAIN SUPPORTING MEMBERS

UNITS	TYPE			MATERIAL	NO/SPAN	SPACING	LAT. SUPPORT			OTHER
SPAN	T.	S.	C.				T.	S.	C.	
1	☐	☒	☐		7	2.5	☐	☒	☐	
2	☐	☒	☐		7	2.5	☐	☒	☐	
3	☐	☒	☐		7	2.5	☐	☒	☐	
4	☐	☒	☐		7	2.5	☐	☒	☐	
5	☐	☒	☐		7	2.5	☐	☒	☐	
6	☐	☒	☐		7	2.5	☐	☒	☐	
7	☐	☒	☐		7	2.5	☐	☒	☐	
	☐	☐	☐				☐	☐	☐	
	☐	☐	☐				☐	☐	☐	

SUPERSTRUCTURE

SIMPLE ☒ CONTINUOUS ☐ CANTILEVER ☐
RIGID FRAME ☐ ARCH ☐ TUNNEL ☐ PED PASS ☐

STEEL — COMPOSITE ☐ W.F. ☐ PLATE GIRD. ☐ TRUSS ☐
MOVABLE ☐ FL. BEAM SYST. ☒ BOLT ☒
WELD ☐ RIVET ☒ STANDARD E

CONCRETE — SLAB ☐ PRECAST GIRD. ☐ T-BEAM ☐ BOX GIRD. ☐
CELLULAR ☐

PRESTRESSED CONCRETE — POST TEN. ☐ PRE-TEN. ☐ GIRDER ☐ SLAB ☐

TIMBER — BEAMS ☐ TRUSS ☐

DECK MAT'L — CONC. ☐ STEEL ☐ TIMBER ☒ GRID ☐

James R Brown — INVENTORY BY — HPE — TITLE — 4-14-70 — DATE

REVIEWED BY G.O. — TITLE — DATE

TO COMPUTER DIV ☐ — DATE

Georgia Department of Transportation

Bridge Inspection & Inventory
Superload Routing
#2 Capitol Square, Room 283
Atlanta, GA 30334
(404)656-5287
FAX: (404)463-8202

FAX TRANSMISSION COVER SHEET

Date: 6/28/00

To: Rick Tatum

Fax: (770) 528 - 2496

Subject: ACKS FERRY BRIDGE over CHATT. RIVER

Sender: BRIAN SUMMERS

Comments:

YOU SHOULD RECEIVE PAGES, INCLUDING THIS COVER SHEET.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE: Bridge Maintenance

DATE: May 17, 2005

FROM: Underwater Bridge Inspection Team

Inspectors on site: Shon Reynolds
Joe O'Daniels

TO: Kerry Wood

Underwater Inspection of the pedestrian bridge over the Chattahoochee River that is adjacent to the Paces Ferry Road bridge, which is bridge structure # 121-0328-0.

An under water inspection was conducted on bent #4 as requested by Roger Henry, Cobb County DOT Bridge Superintendent. The structure was inspected in the inventory direction East, as is the adjacent structure 121-0328-0. Bent #4 consists of 2 cylindrical, concrete filled, steel caissons with a steel web wall. The caissons go into the bottom with no footings visible. The steel below the waterline is heavily corroded with complete section loss and exposed concrete in some areas. It is unknown if steel re-enforcement is present inside the caissons. There is minor localized scour around the caissons. At the time of inspection water level was 1' below the bottom of the web wall and the maximum water depth was 10'. There are small drift piles on the upstream side of the caissons.

Respectfully,

Shon Reynolds

Shon Reynolds
Bridge Inspection Supervisor
GDOT Underwater Bridge Inspection Team

PBS&J

Hermi's Bridge - Analysis
Preliminary Report

Engineer of Record:
Barry Brown, P.E.

Assisted by:
Patrick Pecot, E.I.T.

Date:
7/20/2006

PBS&J

Hermi's Bridge - Analysis
Preliminary Report

Engineer of Record:
Barry Brown, P.E.

Assisted by:
Patrick Pecot, E.I.T.

Date:
7/20/2006

Barry Brown
Patrick Pecot
7/20/2006

Executive Summary

Introduction
The bridge known as Hermi's Bridge was constructed in 1903 by the Cotton States Bridge Company and crosses the Chattahoochee River at Paces Ferry Road. The bridge is a system of two Pratt trusses comprised of eyebar tension members and built-up, latticed compression members. The two main truss spans are 140' long; 16'wide; and 20'deep. The steel beam approach spans are 52'-6" and 35'-0" long. All structural steel components of the bridge consist of A7 riveted steel. The piers are constructed of hollow steel columns filled with concrete and anchored into the bedrock with anchor bolts.

Purpose
The purpose of this analysis is twofold. The first is to calculate the design capacity and determine if the bridge, in its present condition, meets current design codes and policies. The second purpose of the analysis is to assess the failure risk of the critical components of the bridge and to examine the behavior of the bridge in the event of a critical member failure. The failure analysis is used to develop a redundancy system to mitigate the risk of fatigue failure.

Analysis Results
The results of the first part of the analysis indicated that the design capacity of the bridge meets or exceeds the requirements of AASHTO and that the structure can serve as a pedestrian bridge. The second part of the analysis indicated that the critical elements of the bridge are the eyebar members. These tension members make up the bottom chord and the main diagonals of the bridge and are most susceptible to fatigue during the life of the bridge. Although X-ray testing and other methods can be used to find existing fatigue cracks, there is no reliable method of non-destructive testing that can predict the fatigue life of the tension members. The analysis indicated that fatigue cracking in the critical members could be serious enough to warrant closing the bridge.

Various redundancy systems were evaluated to determine the feasibility of reducing tension in the eyebars and, redistributing tension forces in total into the redundant system in the event of fatigue cracking. It was determined that by adding a redundancy system to the bridge, catastrophic failure will be prevented. In addition, if a fatigue crack does occur in an eyebar, tension stresses and therefore fatigue failure potential, is dramatically reduced.

Conclusions
Hermi's Bridge can remain in place and serve as a pedestrian bridge provided the necessary rehabilitation is completed. The fatigue life of the bridge and components cannot be reliably determined and fatigue cracks in critical, tension members would require the bridge to be taken out of service; and in the extreme cause structural collapse. Thus it is necessary to provide a redundancy system for the tension members. This redundancy will be achieved through a system of cables incorporated within the structure along the tension members. The cable system along the bottom chord and the outer four diagonals of each truss (i.e. the last two diagonals on each end of the truss) appears to be the best solution. Such a system will be internal and "hidden" within the bridge structure and would not significantly impact the bridge's aesthetics.

The bridge rehabilitation includes other components as well. The existing paint on Hermi's Bridge is lead-based, which will have to be removed and repainted in accordance with Georgia DOT specifications. The existing railing does not meet the height requirements of AASHTO and will be replaced. In several locations the timber deck shows signs of deterioration and decay and the affected members will be removed and replaced. Pier corrosion has resulted in section loss

near the bottom of the columns. Either concrete encasement or complete replacement of the column with a new reinforced concrete column can be used for repair and strengthening. The column's existing steel plate cladding will be removed, repainted, and repaired as needed. Then, the cladding would be placed back onto the columns. To make a decision of which method to use for column rehabilitation requires an inspection to assess the extent of corrosion. The decayed and deteriorated portions of the timber deck will be removed and replaced as well.

Alternatives and Cost Analysis

In order to determine the feasibility of rehabilitating the existing bridge, the cost of this alternative must be compared with the cost of replacement. For this comparison, two replacement alternatives were considered. The first alternative would be to replace the bridge with one similar to those at Mt Wilkinson Parkway over I-285 and Cumberland Parkway over I-285. With this alternative, the bridge would not be the same size nor have the same look as the existing bridge. The second replacement alternative would be a replication of the existing bridge. The new bridge would be the same size and look the same as the existing bridge. The estimated cost of each alternative is presented below.

Alternative 1 – Rehabilitation	Cost - $502,325.39
Alternative 2 – Replacement	Cost - $800,000
Alternative 3 – Replication	Cost - $1,100,000

Recommendation

This analysis indicates that, with rehabilitation, the bridge can remain in service as a pedestrian bridge. Of the three alternatives examined, rehabilitation is the most economical and is therefore recommended. It should be pointed out however, that the rehabilitation alternative will not eliminate the possibility of fatigue failure of individual tension elements in the existing bridge. The proposed cable redundancy system, however, will prevent catastrophic structural collapse. If this occurs, the bridge will need to be closed until necessary structural repairs are made, as the cable system should not be viewed as a permanent, stand alone, structural system.

Barry Brown
Patrick Pecot
7/20/2006

Hermi's Bridge Analysis

Scope

To create a model that accurately describes the existing conditions at Hermi's Bridge. The loads applied to this model were the pedestrian loading and the self weight of the structure in accordance with the ***AASHTO Guide Specifications for the Design of Pedestrian Bridges, 1st Edition***. This model was used to pinpoint the critical members of the bridge which when fatigued, could cause serious problems for the bridge and ultimately lead to failure. A cost effective structural system was suggested to relieve the stress in the critical members and also provide a safety system in the event of failure of critical members. A determination was made whether or not it is more cost effective to rehabilitate the bridge, or to replace it.

Structure

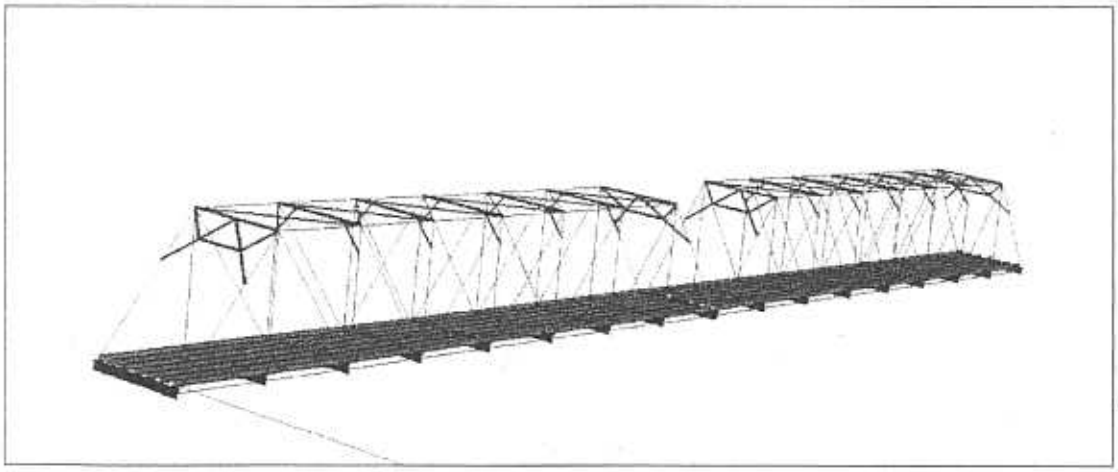
Hermi's Bridge is a Pratt truss comprised of ASTM-A7 Riveted Steel, built by the Cotton States Bridge Co. in 1903. The yield strength of the steel is 30 ksi. The bridge is located on Paces Ferry Road in Fulton County, GA. where Paces Ferry Road crosses the Chattahoochee River. The plans for the bridge were obtained from the Atlanta History Center in Fulton County, GA. The bridge consists of two consecutive, symmetric Pratt trusses, each having a total of eight bays. From top to bottom chord, the truss measures 20'-0". Each bay is 17'-6" in span, with a roadway width of 16'-0". The two trusses are separated by a 1'-4 ¼" space between two pin connections, which are bolted to the substructure. The two middle bays of each Pratt truss have two crossing diagonal tension members. The entrance ways of the truss systems have portal structures, one of which supports the bridge's sign. The top, lateral members of the structure are knee brace systems. Each bay at both top and bottom has diagonal cross bars for a redundant tension system. The entire structure is supported by transfer beams which sit below the deck joists. All vertical compression members and bottom chord tension members are connected to the transfer beams by a sizeable pin system welded to the transfer beams.

The purpose for the bridge when built in 1903 was to provide a river crossing for highway traffic. The proposed purpose for the bridge is as a pedestrian bridge. The new pedestrian load considered for the bridge will be a more distributed over the deck area of the bridge, as opposed to the localized effects of the traffic loads.

Analysis

All analyses of the bridge were done using STAAD Pro. 2005 a structural engineering program used for simple and advanced analysis of structures. All member attributes, properties, and connections were modeled using a combination of braced continuous members for the top chord, and truss members for diagonals and eyebars. Figure 1 below illustrates how the model was set up.

Figure 1: Hermi's Bridge Model



Critical Members

In analyzing this bridge, it is important to consider some members of the bridge more critical than others given the considered loading. Fatigue will suffice as simple factor to measure the critical nature of all members in the structure. Using ***AASHTO Spec. 10.3***, the results of member stress due to self-weight only, and also self-weight and pedestrian load combined, can be compared to the allowable stress ranges for a particular amount of cycles. AASHTO specifies that for pedestrian bridges member stresses should be compared to a 100,000 cycle life span; however, the original use for the bridge was highway traffic. Cars and trucks cause a heavier but more localized load on the bridge, which can cause higher stresses and create more severe fatigue conditions in some members. Therefore, the bridge will be compared to a 2,000,000 cycle life span to be conservative. The comparisons of loadings are as follows:

Table 1: Critical Members

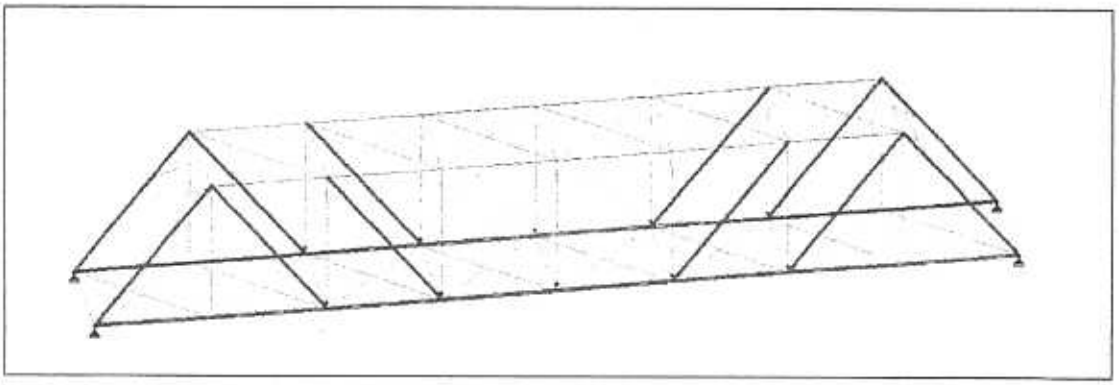
Member Type	Location	Loading	Stress (ksi)	Classification	Fatigue Factor
Diagonal Eyebar	Side Panel	Case 1 / S.W.	5.9	E	0.74
Diagonal Eyebar	Side Panel	Case 1 / S.W. + Ped.	16.5	E	2.07
Built-Up Channel	Top Chord	Case 1 / S.W.	5.7	D	0.57
Built-Up Channel	Top Chord	Case 1 / S.W. + Ped.	16.0	D	1.60
Diagonal Cross Bar	Bottom Panel	Case 1 / S.W.	1.2	B	0.07
Diagonal Cross Bar	Bottom Panel	Case 1 / S.W. + Ped.	3.3	B	0.18
Double-Angle - SL	Top Lateral	Case 1 / S.W.	.54	B	0.03
Double-Angle - SL	Top Lateral	Case 1 / S.W. + Ped.	.75	B	0.03
Built-Up Channel	Vertical	Case 1 / S.W.	3.4	D	0.34
Built-Up Channel	Vertical	Case 1 / S.W. + Ped.	8.1	D	0.81
Transfer Beam	Bottom Lat.	Case 1 / S.W.	0.79	B	0.04
Transfer Beam	Bottom Lat.	Case 1 / S.W. + Ped.	13.5	B	0.75
Eyebar	Bot. Chord	Case 1 / S.W.	2.8	E	0.35
Eyebar	Bot. Chord	Case 1 / S.W. + Ped.	7.8	E	0.98

for the bridge. Benefits of using this alternate are simple. In the event of eyebar failure, the cables would be strong enough to redistribute the tension forces, preventing collapse. Also, bridge and site aesthetics are maintained with this alternate. The cables will be small enough to blend in with the structure and the placement of the cables alongside existing tension members will conceal them when the bridge is seen from most angles.

In past bridge rehabilitations, cable systems have been used to strengthen and redundancy. Roadway bridges with older steel spans similar to Hermi's Bridge have been rehabilitated using cables. For instance, the Walnut Street Bridge, a steel truss bridge crossing the Tennessee River in Chattanooga, Tennessee, underwent rehabilitation in the early 1990s. The Walnut Street Bridge was originally completed in 1891 and used for highway traffic. After rehabilitation, this 1590 ft bridge was converted into a pedestrian crossing.

The solution to preserving the structure is to relieve as much tension in eyebars as possible without changing the overall appearance of the structure. By using the internal cable system, a more desirable result for tension relief can be achieved while maintaining the beauty of the original structure. The cable system follows the tension throughout the bridge for the most efficient use. If yielding or fracture occurs in the diagonal or bottom chord eyebars, the cable system will redistribute the load to prevent overstress of any remaining members. Thus, the solution for rehabilitation is to construct a cable system shown in Figure 2. This picture is a model of the bridge superstructure located between Pier 1 and Pier 2. The cable system would be identical on the next span between Pier 2 and Pier 3.

Figure 2: Cable Addition



The cables which follow the bottom of the bridge relieve tension forces in the bottom chord, while the cables placed diagonally relieve the diagonal eyebar tension forces. The working stresses of the bridge's existing members are as follows:

Table 2: Stress Results of Cable Addition

Member Type	Location	Loading	Stress (ksi)
Diagonal Eyebar	Side Panel	Case 6 / S.W.	4.7
Diagonal Eyebar	Side Panel	Case 6 / S.W. + Ped.	12.9
Built-Up Channel	Top Chord	Case 6 / S.W.	6.2
Built-Up Channel	Top Chord	Case 6 / S.W. + Ped.	17.1
Diagonal Cross Bar	Bottom Panel	Case 6 / S.W.	1.0
Diagonal Cross Bar	Bottom Panel	Case 6 / S.W. + Ped.	2.7
Double-Angle - SL	Top Lateral	Case 6 / S.W.	2.3
Double-Angle - SL	Top Lateral	Case 6 / S.W. + Ped.	2.6
Built-Up Channel	Vertical	Case 6 / S.W.	3.5
Built-Up Channel	Vertical	Case 6 / S.W. + Ped.	8.1
Transfer Beam	Bottom Lat.	Case 6 / S.W.	.75
Transfer Beam	Bottom Lat.	Case 6 / S.W. + Ped.	13.3
Eyebar	Bot. Chord	Case 6 / S.W.	2.3
Eyebar	Bot. Chord	Case 6 / S.W. + Ped.	6.3

From the comparison of Tables 1 & 2, it is apparent that the cables relieve 20% of the tension forces experienced throughout the truss from existing tension members. Being that fatigue is definitely a cause for concern, a 20% of stress relief in tension members would put the bridge in a much better condition than it's current.

In addition to the redundancy, other items have to be addressed. The existing paint on the structure is lead-based. The existing paint must be removed and the bridge repainted in accordance with Georgia DOT specifications. After paint is removed and the structure repainted, the hand railings and part of the timber decking will have to be replaced. Some of the timber decking has decayed and the hand rails do not meet current railing height standards.

Maintenance requirements also need to be considered along with this rehabilitation solution. A requirement that the bridge be inspected at least once every two years by qualified personnel must be adhered to. Special attention must be paid to all pin connections, riveted built-up members, and tension members for signs of fracture or yielding.

Substructure

The existing substructure of the bridge consists of steel piers. Piers 1 and 3 are comprised of 34'-0" high steel columns 3'-0" in diameter. These columns are filled with 1 part Portland cement, 3 parts clean, sharp sand, and 6 parts broken rock of size 7. A diaphragm with the transfer beam bolted between the columns is located within the top 20'-0" of the pier. Pier 2 has the same columns, but has a steel plate between the columns throughout the top 25'-0". All of the piers are anchored into the ground by two 1 ½" diameter anchor bolts which are embedded 3'-0" into rock at the bottom of each column.

Over time, the paint from the steel columns has worn off and the exposed sections could become completely corroded if left exposed to the water. The corrosive steel could react with alkalis in the Portland cement to break down the structural integrity of the piers. A few rehabilitation procedures could prevent this from happening. The first of these is to encase the columns with a concrete collar. The collar will add 3'-0" more in diameter to the existing column and have steel reinforcement equaling 1% of the total column area. The mixture of concrete should include either fly-ash or blast furnace slag to ensure an overall pH of 12 or greater. This mixture will be

most effective in preventing corrosive interaction between the steel and the concrete in an aqueous environment. Rebar will be doweled in from the rock into the columns to provide for anchorage. The second is to replace the column with a reinforced concrete column. The existing steel plates can be blasted, repainted, and put back on the new concrete column. The second alternative is more attractive because the same amount of preparation is needed for both alternatives and you can preserve the appearance of the original columns by keeping the steel plates.

Cost Evaluation

The costs associated with the each process provide definitive support to whether or not it is more effective to replace the bridge, or rehabilitate it. The three options most viable to consider for this project are the rehabilitation by internal cable addition, complete bridge removal and replacement with a more modern pedestrian bridge, or bridge replication. Replication is an attractive option in lieu of bridge replacement if replacement is needed. Since the purpose is to preserve the look and historic feel of the existing bridge, replication would be an option more suited for the purpose of preservation rather than replacement by a more modern bridge. In any case, the economics must be weighed against the"spirit" of the bridge to determine the best decision. The cost breakdown for each process is as follows:

Table 3: Cost Comparison

CABLE ADDITION				
Item	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Lead Paint Removal & Repaint	12,292	SF	$ 15.00	$ 184,380.00
Bridge Timber, Treated	14	MBM	$ 5,586.66	$ 78,213.24
Cables (Incld. Installation)	4,791	LF	$ 4.25	$ 20,361.75
Concrete (Substructure)	80	CY	$ 619.88	$ 49,590.40
Reinf. (Substructure)	16,000	LB	$ 1.03	$ 16,480.00
Handrail	740	LF	$ 45.00	$ 33,300.00
Cofferdams	3	LS	$40,000	$ 120,000.00
		TOTAL COST		$ 502,325.39
REPLICATION				
Item	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Bridge Removal	1	LS	$ 100,000.00	$ 100,000.00
Replica Bridge	1	LS	$ 1,000,000.00	$ 1,000,000.00
		TOTAL COST		$ 1,100,000.00
NEW PED. BRIDGE				
Item	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Bridge Removal	1	LS	$ 100,000.00	$ 100,000.00
Replica Bridge	1	LS	$ 700,000.00	$ 700,000.00
		TOTAL COST		$ 800,000.00

The bridge replication would be more expensive than the replacement due to maintaining the size of the truss and restoring the riveted look to the top chord and columns of the trusses. The estimated cost for the rehabilitation does not include the cost of repainting the bridge approximately every ten years.

The GDOT, or someone contracted with GDOT would have to perform inspections within a two-year cycle. This cost could range up to about $ 5,000 every two years. Also, re-painting of the bridge or parts of the bridge would have to take place every ten years or more. From an economical standpoint, the internal cable strengthening rehabilitation would be the cheapest and most efficient way to ensure that the bridge meets the current standards for bridge design and load carrying capacity, however, you still have to consider the extra cost of maintain the bridge. This option also maintains the overall nostalgic presence of the bridge while adding functionality back to it.