

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: BRST0-2424-00(003) Hall **OFFICE:** Engineering Services
P.I. No.: 142291
SR 284 @ Chattahoochee River/Lake Lanier **DATE:** June 3, 2009

FROM: Ronald E. Wishon, Project Review Engineer *REW*

TO: Bobby Hilliard, State Program Delivery Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held March 30-April 2, 2009. Responses were received on May 29, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-6	Lengthen the bridge on the north end of the project by 2 spans to reduce/eliminate the rock embankment placed in the lake.	<i>(-\$543,000) cost increase</i>	No	According to the USACE memo dated September 25, 2007, the USACE has already approved the current alignment and considers the impact to be insignificant. Also, it was stated that concerns such as storage loss and flow impediment were adequately addressed and a concurrence with no adverse effects was provided.
A-15	Construct 11-foot lanes in lieu of 12-foot lanes to reduce the overall width of the bridge and its approach roadway.	\$114,000	No	There is a large volume of recreational traffic that will use this roadway to access the park and rowing venues. They would be better accommodated with 12 foot lanes. Additionally, with the acceptance of A-16, pedestrians and bicycles will be using the rural shoulder and the further reduction of separation between them and vehicles will be beneficial.
A-16	Reduce the bridge and roadway overall width by constructing a rural section for the entire project.	\$894,000	Yes	This will be done.

ALT #	Description	Potential Savings/LCC	Implement	Comments
E-1	Increase the cost of the bridge removal to include the use of cofferdams to remove the old bridge piers.	(-\$986,000) cost increase	No	The method of removal of the existing bridge piers is left up to the contractor. Allowing the contractor to bid the least expensive removal method will get GDOT the lowest possible price for this work.
E-1.1	Let the old bridge remain in place and function as a bike trail, pedestrian walkway, and fishing pier.	\$1,391,000	No	The USACE, Hall County, and GDOT Bridge Office do not want to retain the existing bridge structure. The USACE has already approved the current bridge, presumably under the conditions that the old bridge be removed. By keeping the old bridge and constructing the new bridge, the storage capacity of the lake would be reduced. If the existing bridge was to be retained, the current bridge plans would need to be redesigned so that piers from the new bridge would match up with the existing piers. Negotiations with USACE would have to be reinitiated and could delay the project. Also, Hall County and GDOT do not want to be responsible for maintaining the old bridge.
I-1	Revise the bituminous concrete pavement section for the project.	\$45,000	Yes	This will be done.
J-1	Relocate the pedestrian culvert underpass and new dual park entrances closer to the existing park driveway entrances.	\$4,000	Yes	This will be done.
J-1.1	Eliminate the pedestrian culvert underpass and install a signalized pedestrian crossing.	\$66,000	No	The signalized crossing does not address the needs of Hall County and the rowing venue during high volume events. During high volume rowing events, the crossing would be utilized continuously, effectively bringing traffic to a standstill. It also would present an unexpected operational characteristic on a free flow section of roadway.

ALT #	Description	Potential Savings/LCC	Implement	Comments
J-4	Construct the pedestrian culvert underpass using a corrugated metal arch culvert in lieu of a concrete box culvert.	\$41,000	No	The cost savings for the metal arch culvert did not include a cost for a concrete floor inside the culvert. The estimated cost for a 6" concrete floor would be approximately \$2,700, which would reduce the savings to \$38,300. In addition, the concrete culvert would be 8' high while the metal arch culvert would be 11' high. This additional height would have to be accounted for by raising the roadway profile, thus extending the project, or lowering the culvert which would create drainage issues due to the proximity to the lake.
J-5	Reduce the roadway width by using 2:1 side slopes and MSE side walls to reduce the length of the pedestrian culvert underpass.	\$120,000	Yes	This will be done.
K-1	Eliminate the sidewalk on the east side of the project to reduce the width of the roadway/bridge sections.	\$716,000	No	Since A-16 will be implemented, this recommendation no longer applies.
K-1.1	Eliminate the sidewalks on both sides of the project to reduce the width of the roadway/bridge sections.	\$1,431,000	No	Since A-16 will be implemented, this recommendation no longer applies.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved:  Date: 6/3/09
 Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

c: Genetha Rice Singleton
Terry Rogers/David Lyons
Neil Kantner/Justin Lott
Paul Liles/Bill Duvall/Bill Ingalsbe/Judy Meisner
Randy Davis
Nabil Raad
Funmi Adesesan
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: BRST0-2424-00(003), Hall County
SR 284 @ Chattahoochee River/Lake Lanier
P.I. No. 142291

OFFICE: Engineering Services

DATE: May 29, 2009

FROM: Terry Rogers, Project Manager

TO: Ronald E. Wishon, Project Review Engineer

SUBJECT: **Value Engineering Study-Responses**

Reference is made to the alternative proposals contained in the Value Engineering Study- Final Report dated April 29, 2009 for the above referenced project. Our recommendations and responses are as follows:

1. **Value Engineering Alternative A-6** – Lengthen the bridge on the north end by two spans to reduce the amount of rock fill placed in the lake and reduce the project's impacts on the lake. (**Cost Increase: \$543,000**)
 - *Approval of VE Alternative A-6 is not recommended.*
According to the USACE memo dated September 25, 2007, the USACE has already approved the current alignment and considers the impact to be insignificant. Also, it was stated that concerns such as storage loss and flow impediment were adequately addressed and a concurrence with no adverse effects was provided. Since the USACE has agreed to the current bridge as shown, it is not advisable to add approximately \$543,000 in cost to the project.
2. **Value Engineering Alternative A-15** – Construct 11-foot lane in-lieu-of 12-foot lanes on the bridge and roadway to reduce the overall width of the bridge/roadway sections. (**Cost Savings: \$114,000**)
 - *Approval of VE Alternative A-15 is not recommended.*
Based on the other VE alternatives, it is recommended to implement alternative A-16, construct a rural typical section for the entire length of the project. By implementing alternative A-16, the sidewalks, curb and gutter, and bike lanes would be eliminated. Alternative A-15 is not recommended because pedestrians and bicycles will be using the rural shoulder and the further reduction of separation between them and vehicles would be unsafe. Also, there is a large volume of recreational traffic that would be using this road to access the park and rowing venues. This large volume of recreational traffic would be better accommodated with 12 foot lanes.

3. **Value Engineering Alternative A-16** – Reduce the bridge and roadway width by constructing a rural roadway/bridge section for the entire length of the project. **(Cost Savings: \$894,000)**
 - *Approval of VE Alternative A-16 is recommended.*
The existing SR 284 currently does not have sidewalks, curb and gutter, or bike lanes anywhere in the vicinity of this project. While this roadway is currently on the state bike plan, there are no other projects that propose bike lanes in this corridor. Pedestrians and bicycles would be able to use the 6.5 foot rural paved shoulder.

4. **Value Engineering Alternative E-1** – Increase the cost of the bridge removal item to include the cost of using cofferdams to remove the old bridge piers. **(Cost Increase: \$986,000)**
 - *Approval of VE Alternative E-1 is not recommended.*
The method of removal of the existing bridge piers is left up to the contractor, subject to the approval of the means and methods. Allowing the contractor to bid the least expensive removal method, will get GDOT the lowest possible price for this portion of the project. Therefore, this alternative is not recommended.

5. **Value Engineering Alternative E-1.1** – Keep the old bridge in place and use it as a bike trail, pedestrian walkway, and fishing pier to enhance the community value of the area. **(Cost Savings: \$1,391,000)**
 - *Approval of VE Alternative E-1.1 is not recommended.*
The USACE, Hall County, and GDOT Bridge Office do not want to retain the existing bridge structure. The USACE has already approved the current bridge, presumably under the conditions that the old bridge be removed. By keeping the old bridge and constructing the new bridge, the storage capacity of the lake would be reduced. If the existing bridge was to be retained, the current bridge plans would need to be redesigned so that piers from the new bridge would match up with the existing piers. Negotiations with USACE would have to be reinitiated and could delay the project. Also, Hall County and GDOT do not want to be responsible for maintaining the old bridge.

6. **Value Engineering Alternative I-1** – Revise the bituminous pavement design for the project. **(Cost Savings: \$45,000)**
 - *Approval of VE Alternative I-1 is recommended.*
Final pavement design has not been approved by the Pavement Management Branch. Will revise the plans accordingly, pending approval of the final pavement design by the Pavement Management Branch.

7. **Value Engineering Alternative J-1** – Relocate the pedestrian culvert underpass and new dual park entrances closer to the existing (Station 52+50) park driveway entrances. **(Cost Savings: \$4,000)**
 - *Approval of the VE Alternative J-1 is recommended.*
Relocating the pedestrian culvert would move it to the normal pedestrian path between the rowing venue boat house and the rowing course. The new location would also shorten the culvert and provide better visibility through the culvert, essentially making it feel safer. Also, the park driveway entrances should have a flatter grade at the new location. Hall County was especially receptive to the new proposed location.

8. **Value Engineering Alternative J-1.1** – Eliminate the pedestrian culvert underpass and install a signalized pedestrian crossing. **(Cost Savings: \$66,000)**
 - *Approval of VE Alternative J-1.1 is not recommended.*
The signalized crossing does not address the needs of Hall County and the rowing venue during high volume events. During high volume rowing events, the crossing would be utilized continuously effectively bringing traffic to a standstill. It also would present an unexpected operational characteristic on a free flow section of roadway. In addition, the signalized crossing would create the issue of responsibility for maintenance (i.e. electricity). Overall the pedestrian culvert would achieve the safest crossing for pedestrian traffic.

9. **Value Engineering Alternative J-4** – Construct the pedestrian culvert underpass using a corrugated metal arch culvert in-lieu-of a concrete box culvert. **(Cost Savings: \$41,000)**
 - *Approval of VE Alternative J-4 is not recommended.*
The cost savings for the metal arch culvert did not include a cost for a concrete floor inside the culvert. The estimated cost for a 6 inch concrete floor would be approximately \$2,700, which would reduce the savings to approximately \$38,300. In addition, the concrete culvert would be 8 feet high while the metal arch culvert would be 11 feet high. This additional height would have to be accounted for by raising the roadway profile, thus extending the project, or lowering the culvert which would create drainage issues due to the proximity to the lake.

10. **Value Engineering Alternative J-5** – Reduce the roadway width by using 2:1 side slopes and MSE side walls to reduce the length of the pedestrian culvert underpass. **(Cost Savings: \$120,000)**
 - *Approval of VE Alternative J-5 is recommended.*
This alternative would result in reduced earthwork, pedestrian culvert length, and right-of-way costs. The required guardrail and MSE walls would be a cheaper alternative and the guardrail would create a barrier that would funnel pedestrians to use the pedestrian culvert as intended. These modifications will be considered at all appropriate locations.

11. **Value Engineering Recommendation K-1** – Eliminate the sidewalk on the east side of the project to reduce the width of the roadway/bridge sections. (**Cost Savings: \$716,000**)

- *Approval of VE Alternative K-1 is not recommended.
This alternative is not recommended because implementing VE alternative A-16, changing the typical section to a rural typical section, would eliminate the sidewalk on both sides.*

12. **Value Engineering Recommendation K-1.1** – Eliminate both sidewalks on the project to reduce the width of the roadway/bridge sections. (**Cost Savings: \$1,431,000**)

- *Approval of VE Alternative K-1.1 is not recommended.
This alternative is not recommended because implementing VE alternative A-16, changing the typical section to a rural typical section, would eliminate the sidewalk on both sides.*

PRECONSTRUCTION STATUS REPORT FOR PI:142291-

PROJ ID : 142291- Hall
COUNTY : 0.55
LENGTH (MI) : BRST0-2424-00(003)
PROJ NO.: Rogers, Terry
PROJ MGR: Program Delivery
OFFICE : No Consultant, GDOT In-House Design
CONSULTANT: GDOT
SPONSOR :
DESIGN FIRM:

SR 284 @ CHATTAHOOCHEE RVR/LAKE LANIER 4 MI N OF GAINESVILLE
MPO: Gainesville
TIP #: GH-050
MODEL YR : 2010
TYPE WORK: Bridges
CONCEPT: BR REPL
PROG TYPE: Replacement
Prov. for ITS: N
BOND PROJ :

MGMT LET DATE : 06/15/2010
MGMT ROW DATE : 07/17/2009
SCHED LET DATE : 4/4/2011
WHO LETS? : GDOT Let
LET WITH :

DOT DIST: I
CONG. DIST: 9
BIKE: Y
MEASURE: E
NEEDS SCORE: 04
BRIDGE SUFF: 39.88

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Date Auth			
						Phase	Approved	Proposed	Cost		Fund	Status	
6/19/2009		Concept Development	7/31/2003	2/5/2004	100	PE	2000	2000	410,188.00	Q10	AUTHORIZED	10/26/1999	
		Concept Meeting	11/4/2003	11/4/2003	100	ROW	2008	2010	1,660,825.60	L1C0	PRECST		
		PM Submit Concept Report	12/30/2003	12/31/2003	100	CST	LR	LR	9,326,000.00	L1C0	PRECST		
		Receive Preconstruction Concept Approval	1/14/2004	1/21/2004	100								
		Management Concept Approval Complete	1/26/2004	2/5/2004	100								
		Revise or Re-validate Approved Concept	7/15/2007	9/5/2007	100								
	6/30/2009	Value Engineering Study	1/6/2009		82								
	8/6/2009	Environmental Approval	8/1/2003	1/8/2003	40								
		Field Surveys/SDE	8/12/2002	1/8/2003	100								
		Preliminary Plans	2/5/2004	8/23/2004	100								
		Preliminary Bridge Design	2/5/2004	7/18/2005	100								
		404 Permit Obtainment			0								
		PFPR Inspection			0								
		R/W Plans Preparation			0								
		R/W Plans Final Approval			0								
		L & D Approval	1/26/2004	2/5/2004	100	PE Cost Est Amt:	410,188.00	Date:	12/7/2007	Phase	PE	Cost	0.00
		R/W Acquisition			0	ROW Cost Est Amt:	1,324,000.00	Date:	9/5/2007	Phase	ROW	Cost	633,000.00
		Stake R/W			0	CST Cost Est Amt:	9,326,000.00	Date:		Phase	CST	Cost	L1C0
		Soil Survey			0								L1C0
		Bridge Foundation Investigation			0								
		Final Design			0								
		Final Bridge Plans Preparation			0								
		PFPR Inspection			0								
		Submit PFPR Responses(OES)			0								

STIP AMOUNTS

Phase **Cost** **Fund**
 PE 0.00 Q10
 ROW 633,000.00 L1C0
 CST

District Comments

Had 2 PIOH's; Contract expired 3-3-08. Now in-house with Dist 1 Design. #18 on bridge list; Bridge w/pedestrian culvert at Olympic Rowing Venue 8,000 ADT Off-site detour for 2 months using precast culvert. Met w/FHWA-Env. working on CE responses, sent revised response to PIOH attendees 4-09; no PAR needed; COE approved; Met with Hall County VE study held 3/30/09. Will update est. after complete VE changes TR 4-09

Acquired by: DOT
Acquisition MGR:
R/W Cert Date:

Cond. Filed:
Relocations:
Acquired:

Prel. Parcel CT: 5 **Total Parcel in ROW System:**
Under Review: **Options - Pending:**
Released: **Condemnations- Pend:**

DEEDS CT: