

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

**OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE**

FILE P.I. #0007021 **OFFICE** Design Policy & Support
CSBRG-0007-00(021)
GDOT District 1 - Gainesville
Forsyth & Hall Counties **DATE** May 8, 2012
Bridge Replacement: SR 53 @ Chestatee River

FROM *for [Signature]* Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED CONCEPT REPORT

Attached is the approved Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Genetha Rice-Singleton, Program Control Administrator
Bobby Hilliard, State Program Delivery Engineer
Cindy VanDyke, State Transportation Planning Administrator
Angela Robinson, Financial Management Administrator
Glenn Bowman, State Environmental Administrator
Ben Rabun, State Bridge Engineer
Kathy Zahul, State Traffic Engineer
Georgene Geary, State Materials & Research Engineer
Lisa Myers, State Project Review Engineer
Jeff Baker, State Utilities Engineer
Ken Thompson, Statewide Location Bureau Chief
Bayne Smith, District Engineer
Robert Mahoney, District Preconstruction Engineer
Allen Ferguson, District Utilities Engineer
Otis Clark, Project Manager
BOARD MEMBER - 9th Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: CSBRG-0007-00(021)
County: Forsyth/Hall
P.I. Number: 0007021
Federal Route Number: N/A
State Route Number: 53

S.R. 53 over Chestatee River (Lake Lanier) Bridge Replacement

Submitted for approval:

DATE 10/27/11
DATE 11/2/2011
DATE 11/2/11

Al Bowman
Al Bowman, The LPA Group, Inc.
Robby Stalham
State Program Delivery Engineer
Ann Clark
Project Manager

Recommendation for approval:

DATE _____
DATE 11-28-11
DATE 11-15-11
DATE 11-14-11
DATE 11-17-11
DATE _____
DATE 4-19-12
DATE _____

*** Recommendations on file - YMDH*

Program Control Administrator
*** Glean Bowman* YMDH
State Environmental Administrator
*** Kathy Zahul* YMDH
State Traffic Engineer
*** Ron Wishon* YMDH
Project Review Engineer
*** Sal Pirzad* YMDH
for State Utilities Engineer
District Engineer/District Utilities Engineer
*** Ben Rabun* YMDH
State Bridge Design Engineer
State Transportation Financial Management Administrator

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

DATE 11-21-11

Cynthia L. Vurpe
State Transportation Planning Administrator

** OFFICE OF PLANNING WILL WORK WITH THE MPO TO MODIFY THE TIP/RTP TO REFLECT THE PROJECT LENGTH AS SHOWN IN THE PROJECT CONCEPT REPORT UPON APPROVAL.*

Need and Purpose Statement:

Background

The existing Bolling Bridge is a single structure (Structure ID 117-0010-0), steel truss bridge that carries two 12-foot travel lanes of State Route (SR) 53 over the Chestatee River / Lake Lanier. The bridge is located approximately 7.3 miles west of the city of Gainesville and is located in both Forsyth and Hall Counties. The project area is characterized by U.S. Army Corps of Engineers (USACE) land, on each side of the crossing and nearby residential development. The parkland east of the Chestatee River crossing is located in Hall County and is known as Little Hall Park. The USACE-owned property west of the crossing in Forsyth County is unofficially known as Bolling Hill Park. The Chestatee River / Lake Lanier is considered a navigable waterway by the USACE.

Existing Condition

The existing bridge was constructed in 1956 and is approximately 844 feet long and 30 feet wide (total deck width), with 1-foot outside shoulders and no median. The existing vertical clearance of the Bolling Bridge is approximately 17 feet above the normal pool elevation (Elevation 1071 feet). The existing maximum horizontal clearance between bridge piers is approximately 285 feet, between the two center piers. At the bridge approaches, SR 53 is a two-lane rural highway with 10-foot travel lanes, approximately 8-foot outside shoulders (2 feet paved), and no median. The functional classification of the roadway is Rural Principal Arterial.

Logical Termini

The proposed project is not associated with any other construction project and would not restrict consideration of any future improvements to SR 53. The proposed improvements are limited to the replacement of an existing bridge, on essentially the same alignment. The total project length is approximately 0.74 mile, including the bridge approaches. The project termini are located where the new bridge would tie into the existing SR 53 roadway.

Replacement Justification

The Bolling Bridge is a fracture critical structure that has been struck numerous times due to its low overhead clearance (minimum clearance of 15 feet – 0 inches). The deck within the main spans is currently six inches thick and is exhibiting transverse and longitudinal cracking, as well as some minor spalls on the underside of the deck. Some of the floor beams and stringers have experienced minor section loss. Swelling within some of the connection areas between the gusset plates and floor beams has also been observed. All of the bents in the substructure also exhibit minor cracking. Due to these structural integrity issues, replacement of this structure is recommended.

Need & Purpose

The proposed project would replace the existing insufficient Bolling Bridge over the Chestatee River / Lake Lanier with a new structure, just north of the existing bridge location. The centerline of the replacement structure would be located approximately 44 feet north of the centerline of the existing

bridge. The footprint of the replacement structure is proposed to be relocated to the north in order to maintain traffic during the construction phase, as there are no reasonable detours available to accommodate motorists traveling on SR 53 during the construction period. The replacement bridge would be approximately 1000 feet long and approximately 43.25 feet wide (total deck width). The typical section of the new structure would include two 12-foot travel lanes with 8-foot outside shoulders and no median. The bridge approaches would be reconstructed to include 8-foot rural shoulders, with 2 feet paved. The replacement bridge would have a minimum vertical clearance of 17 feet above normal pool elevation and a maximum horizontal clearance of approximately 220 feet measured from the either side of the central pier to each of the outside piers.

Description of the proposed project:

Project CSBRG-0007-00(021) represents the construction of a new two lane bridge over Chestatee River (Lake Lanier) approximately 7.3 miles west of the city of Gainesville. The project will replace the existing steel truss bridge that currently exists at this location, which is considered structurally deficient. The project will begin at a point approximately 0.39 miles southwest of the Chestatee River and extend to a point approximately 0.35 miles northeast of the Chestatee River. The project length is approximately 0.74 miles. The proposed bridge will consist of two 12-foot lanes with 8-foot shoulders. The roadway approaches will be reconstructed to provide two 12-foot lanes and 8-foot shoulders. The shoulder will include a 2-foot paved shoulder.

Is the project located in a PM 2.5 Non-attainment area? Yes No

Is the project located in an Ozone Non-attainment area? Yes No

PDP Classification: Major Minor

Federal Oversight: Full Oversight (), Exempt(), State Funded (), or Other ()

Functional Classification: Rural Principal Arterial

U. S. Route Number(s): N/A **State Route Number(s):** 53 **County Route Number(s):** N/A

Traffic (AADT):

S.R. 53: Open Year: (2017) 12,500 Design Year: (2037) 18,000

Existing design features:

S.R. 53

- Typical Section: Rural two 10-foot lanes, 2-foot paved, 6-foot grassed rural shoulders
- Posted speed: 55 mph Minimum radius for curve: 1270 ft.

- Maximum super-elevation rate for curve: 6.00%
- Maximum grade: 5.1 %
- Width of right of way: 200 ft.
- Major structures: Steel truss bridge over Chestatee River (Lake Lanier)
Structure ID# 117-0010-0
Sufficiency Rating: 39.45
- Major interchanges or intersections along the project: N/A
- Project Length: 0.74 miles

Proposed Design Features:

S.R. 53

- Proposed typical section: The proposed roadway will consist of two 12-foot travel lanes with eight-foot rural shoulders that will include a two-foot paved shoulder.
- Proposed Design Speed: 55 mph
- Proposed Maximum grade: 4.94 %
- Maximum grade allowable: 5.00 %
- Proposed Maximum grade Side Street: N/A %
- Maximum grade allowable: N/A %
- Proposed Maximum grade driveway: 11 %
- Proposed minimum radius of curve 1610 ft
- Minimum radius allowable 1060 ft
- Maximum allowable super-elevation rate: 6.0 % (6.0 max. S.E. Table)
- Proposed maximum super-elevation rate: 5.4 %
- Right of way
 - Width 270 ft.
 - Easements: Temporary (**X**), Permanent (**X**), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (**X**), Other ().
 - Number of parcels: 6 Number of displacements: 0
 - Business: 0
 - Residences: 0
 - Mobile homes: 0
 - Other:
- Structures:
 - Bridges: 1-4 Span Spliced Continuous Bulb Tee Girder (185-240-240-185) 1000 ft in total length 43'-3" wide – See Structure Type Study and VE Implementation letter
- Retaining walls: MSE wall and wrap-around vertical abutment on east approach and north side
- Major intersections and interchanges: N/A
- Transportation Management Plan Anticipated: **Yes** () **No** (**X**)
- Traffic control during construction: Maintain existing two lanes of traffic during construction. Some temporary lane closures may be required during staged construction.

- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
LANE WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
VERTICAL ALIGNMENT:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)
LATERAL OFFSET TO OBSTRUCTION:	()	()	(X)

- Design Variances: None Anticipated
- Environmental concerns:
 - Section 10 Permit / Section 404 NWP 23 / Section 401 Water Quality Certification (with wetland mitigation)
 - GA Sediment & Erosion Control Act – Request for Buffer Variance (impacts to 25-foot waters of the State buffer).
 - Migratory Bird Treaty Act.
 - Section 106 of NHPA –
 - Section 4(f) of DOT Act
 - NEPA – Categorical Exclusion documentation
Public Involvement Open House
- Additional Permits
 - Notice of Intent (NOI) with SWPPP/SPCCP under the State’s NPDES General Permit.
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X), No (),
 - Categorical exclusion (X),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
 - Environmental Impact Statement (EIS)
- Utility involvements: AT&T attached to bridge
- VE Study Required Yes (X) No ()
- Benefit/Cost Ratio: N/A

Project Concept Report Page 7
 Project Number: CSBRG-0007-00(021)
 P.I. Number 0007021
 County: Forsyth/Hall

Project Cost Estimate and Funding Responsibilities:

	PE	ROW	Utility	CST	Mitigation
By Whom	GDOT	GDOT	GDOT	GDOT ^{CRP} \$12,724,702	GDOT
Amount	\$1,861,750.88	\$1,786,000.00	\$0.00	\$11,945,795.73	\$77,825.00

*CST Cost includes: Construction, Engineering and Inspection and Total Liquid AC Adjustment

Project Activities Responsibilities:

- Design – Consultant
- R/W Acquisition – Georgia DOT
- Right-of Way funding (real property): Georgia DOT
- Relocation of Utilities - Georgia DOT
- Environmental-Consultant
- Letting to contract – Georgia DOT
- Supervision of construction – Georgia DOT
- Providing materials pit - Contractor
- Providing detours - Not anticipated; traffic maintained on existing, construction on new alignment
- Environmental Studies/Document/Permits: Consultant
- Environmental Mitigation – Georgia DOT

Coordination

- Initial Concept Meeting date and brief summary. N/A
- Concept meeting date and brief summary. (Attach minutes, if required)
- PAR meeting, dates and results. (Attach minutes, if required)
- FEMA, USCG, and/or TVA
- USACOE Early Coordination. (Attach minutes, if required)

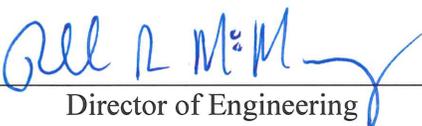
Alternates considered:

- No Build: This alternate does not meet the Need and Purpose of the project.

Attachments:

1. Concept Team Meeting Minutes
2. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection
 - b. Completed Fuel & Asphalt Price Adjustment forms
 - c. Right-of-Way
 - d. Utilities
 - e. Environmental Mitigation
3. Typical Sections
4. Traffic Counts
5. Bridge Inventory
6. Proposed Structure Alternate
7. USACOE Early Coordination Meeting Minutes
8. USACOE Follow up Coordination Meeting Minutes
9. VE Study Implementation Letter
10. Project Layout

Approvals, Exempt projects:

Concur: 
Director of Engineering

Approve: 
Chief Engineer

Date: 5/7/2012

Concept Team Meeting Notes
GDOT Project CSBRG-0007-00(021), Forsyth & Hall Counties P.I. 0007021
SR 53 over the Chestatee River Bridge Replacement Project
GDOT District 1 Office – Gainesville, GA
August 5, 2011

Attendees:

Otis Clark – GDOT (Office of Program Delivery)
Robert Mahoney – GDOT (District 1)
Michael Johnson – GDOT (Traffic Operations)
Derek Wade – GDOT (Area 1 Construction)
Bobby Dollar – GDOT (OES)
Kim Coley – GDOT (District 1 Planning)
Mary Dills – USACE (Savannah District)
Tim Allen – Forsyth County
Jody Woodall – Hall County
Al Bowman – LPA/Baker (Project Manager/Structures)
Brad Gowen – LPA/Baker (Roadways)
Mary Best – LPA/Baker (Environmental)
Paul Condit – LPA/Baker (Environmental)
Tony Pritchett – MACTEC (Utilities)

Attendees via teleconference:

Paul Liles – GDOT (Bridge Office)
Ben Rabun – GDOT (Bridge Office)
Bill Duvall – GDOT (Bridge Office)

Introduction

The meeting began with introductions. Otis Clark, the GDOT project manager, explained to the attendees that this project is on an accelerated schedule, and that the money for this project needs to be spent in the year for which it is designated. He expressed his desire to find ways to condense the schedule and asked that all team members help with this effort. The project title and a brief description were provided and then Al Bowman, the LPA project manager, was introduced.

Draft Concept Report

Mr. Bowman introduced himself as the consultant project manager and then began to review the draft concept report. The project's need and purpose was provided along with a few points justifying the need to replace the old bridge rather than rehabilitate. The justification points included: the existing roadway is narrow compared to AASHTO standards; the bridge has been struck several times by large trucks due to insufficient overhead clearance at the portal frame, resulting in a compromise of the bridge's structural components; and there is rust accumulating on many of the beams and other bridge components.

The project description was reviewed, and then Ben Rabun with the GDOT bridge office asked why this project was being considered exempt from federal oversight. It was explained that this is a bridge replacement project on a state route, and it was understood that federal oversight is typically reserved for projects occurring on interstates or within FHWA right-of-way. Mr. Rabun then explained that because federal money is involved with this project, FHWA has the right to choose if it would like to be involved with this project. FHWA reserves the right to full oversight on any project where federal funds are being

used. [Post meeting note: Engineering Services confirmed that this project was not identified for Federal Oversight by FHWA, therefore the project will remain as “Exempt” in the Concept Report]

Robert Mahoney with the GDOT District 1 Office stated that the roadway shoulders should be constructed wide enough so that the road would easily tie into the future SR 53 widening project. Mr. Jody Woodhall with Hall County notified everyone that this stretch of SR 53 is on the local (Hall County) bicycle/pedestrian route [see pages 3 and 4 for later discussion].

Concept Layout

Mr. Bowman presented the concept layout prepared by LPA. There are no GDOT-acceptable detours available at this crossing of Lake Lanier. The existing bridge would need to remain in place during construction in order to avoid a 20-mile detour on county routes that may need to be upgraded to state standards in order to be an acceptable detour for motorists. Therefore, the conceptual plan is to maintain traffic on the existing bridge and build the new bridge on parallel alignment 68 feet to the north (centerline to centerline). The location of the new bridge was selected to allow for the grade changes and maintenance of traffic on the existing roadway. LPA proposed to locate the new bridge to the north in order to utilize the longest and widest part of the east “finger” and to avoid impacts to Little Hall Park, a USACE-owned public park located just south and east of the proposed project limits.

The bridge replacement project would begin approximately 1,800 feet west of the Lake Lanier crossing, and would then shift north of its existing alignment where it would impact Bolling Hill Park, an undeveloped USACE-owned park property. The proposed bridge would be approximately 850 feet long with a 40-foot tall Mechanically Stabilized Earth (MSE) wall proposed at the east abutment and running along the north east approach designed to reduce impacts to Lake Lanier. The project would tie back into existing SR 53 near the crest of the roadway just west of the entrance to Little Hall Park. It was also explained that the proposed right-of-way requirements could possibly be decreased if necessary to reduce the overall cost of the project.

Mr. Mahoney asked what is to become of the existing bridge and roadway once construction is complete. Mr. Bowman explained that both the existing bridge and the existing roadway would be removed upon completion of the proposed project. Mary Dills asked how the existing bridge would be demolished. Mr. Bowman stated that blasting would probably be the method of demolition. Ms. Dills said that side scan sonar would be required both before and after the demolition activities take place, that a permit from the USACE would be required prior to blasting activities, and that the permit must go out on public notice for 30 days.

Bridge Plans

The concept team meeting moved forward with a review of several bridge design plans developed by LPA as possible alternatives for the proposed project. The existing bridge has a shallow superstructure, which provides approximately 17 feet of minimum vertical clearance for aquatic vessels traveling under the bridge. In order to accommodate this minimum vertical clearance for the proposed new bridge, the profile of the roadway needed to be raised. Above Lake Lanier’s surface, this project appears to be a typical stream crossing; however, the substantial (80-foot) depth of the lake at this location presents a design challenge with respect to the bridge substructure to be overcome when designing this project.

For Option A (spread footings on rock), cofferdams would be required for construction, and the footings would cost nearly \$750,000 each. Option B would use large drilled caissons to install the footings, and the cost would be approximately \$500,000 for each unit. Option C would use caissons similar to those for Option B; however, steel braces would be added at various locations along each pier for additional support.

Derek Wade with GDOT Construction asked how well each of these proposed substructure pier options would hold up structurally if subjected to a collision with a large vessel such as an 80-foot party barge. Mr. Bowman responded that the proposed piers for each of the build options (varying from 5 to 8 feet in diameter depending on the build option) would easily handle an impact from a vessel that size. Paul Liles with the GDOT bridge office asked about the horizontal clearance of the proposed substructure, and if the USACE was accepting of the proposed substructure during the pre-concept meeting. Mr. Bowman explained that the existing bridge is a 3-span continuous structure with 2 piers within the lake and approximately 280 feet of horizontal clearance. He added that the USACE would like to see something close to the existing 280 feet of horizontal clearance provided by the new bridge.

Option A proposes a continuous 6-span structure with five 150-foot spans plus one span at 100 feet with 5 piers for support. This alternative would be constructed using simple-span prestressed concrete (PSC) beams. This alternative would cost approximately \$135 per square foot, or \$5 million for construction.

Option B would be a spliced girder structure with 4 spans: 175 – 250 – 250 – and 175 feet long. Double caissons are being proposed with this alternative, at a cost of approximately \$133 per square foot or \$4.9 million for construction. A large drawback for this alternative is that one pier would be located directly in the middle of the channel.

Option C proposes a segmented concrete box girder with two spans. The cost of this alternative would be approximately \$173 per square foot or \$6.4 million dollars for construction. Option D would satisfy the requested 280-foot horizontal clearance by providing 3 spans: 250 – 350 – and 250 feet long; however, the cost of the steel beams would be substantial, and the associated maintenance costs would be higher than with the other design options. The cost of construction would be approximately \$5.6 million.

Option E is a proposal for a continuous main unit with 3 spans: 175 – 250 – and 175 feet long with an additional span at each end: one at 150 feet long and the other at 100 feet long. This option would use simple-span PSC beams, and would cost approximately \$139 per square foot or \$5.1 million for construction.

Other Discussion

There was a question as to what is considered normal pool elevation at Lake Lanier. LPA used Elevation 1071 as the normal pool elevation during concept development; however, some USACE records list Elevation 1073 as the normal pool elevation. Mary Dills explained that the Mobile District would have to provide clarity on this subject. Paul Liles mentioned that LPA also needs to get USACE concurrence on the proposed pier locations. LPA had proposed to await a decision by GDOT on the preferred design concept prior to requesting the USACE review of the preferred alternative. Mr. Liles indicated that the Department is in agreement with the overall design of the bridge/project, but that there were some concerns with the type of piers and the style of footings being proposed.

The proposed project would impact six parcels of land. Robert Mahoney stated that he does not believe that acquisition of the necessary right-of-way or easements would be a major issue for the District. The only utilities carried on the existing bridge are an AT&T line, which will be relocated onto the new bridge.

Tim Allen with Forsyth County asked if the new bridge could be constructed in a manner where the crown of the bridge could be placed in a location where the bridge could be restriped as a 10-foot outside shoulder and a 4-foot inside shoulder. This would allow the 10-foot outside shoulder to be used as a multi-use path if a SR 53 widening project comes through the area in the future. Otis Clark and the GDOT bridge office said that this would be considered, but due to the nature of the proposed project (bridge replacement), it is unlikely that the replacement bridge would be designed to account for a future condition that may or may not come to fruition.

Bobby Dollar, the NEPA specialist for the Department, asked for some clarity on the project schedule. Otis replied that the schedule currently calls for right-of-way authorization in December 2012. Mary Best and Paul Condit provided a breakdown on the environmental process, discussing what has been completed and what hurdles are left to be cleared. The two major environmental issues concerning this project are the National Register of Historic Places (NRHP) – eligible status of the existing bridge and the right-of-way impacts to Bolling Hill Park on the west side of the crossing. Both of these issues will be handled as Programmatic Section 4(f) evaluations, but it can take some time to negotiate the mitigation necessary to get each of these documents cleared by FHWA.

Mary Best explained that a technical assistance meeting is planned to be held between LPA's cultural resources subconsultant and the State Historic Preservation Officer in the next 2 to 4 weeks. Mitigation requirements and replacement justification would be the two main points of discussion at that meeting. Ben Rabun, Paul Liles, Otis Clark, and Bobby Dollar asked that they be invited to that meeting. LPA suggested that, for some projects, multi-use paths have been used as mitigation measures, and that the multi-use path discussed earlier could potentially be considered a form of mitigation by connecting the two USACE-owned parks on either side of the crossing. Ben Rabun responded that the multi-use path may not be feasible because there is a limited amount of money available for the project, and they don't have the authority to make that decision. Mr. Clark suggested that the multi-use path could possibly be addressed as a separate project with a different funding source.

Derek Wade brought up the construction schedule and noted that the timeline would need to take into account the migratory bird nesting season due to the presence of an osprey nest on the existing bridge. Ben Rabun asked if the replacement osprey nest platforms have to be made part of the replacement bridge structure, or could they be provided at another location near the project site. LPA responded that the Georgia Department of Natural Resources – Wildlife Resources Division has staff dedicated to osprey nest relocations, and that they would be contacted for guidance.

The GDOT bridge office would like to get USACE concurrence on the proposed span arrangement. LPA suggested that a meeting would be held in the near future with the USACE to discuss the preferred alternative design. Concurrence on the proposed span locations would be a point to be discussed at that time. Ben Rabun, Paul Liles, Otis Clark, and Bobby Dollar asked to be invited to the next meeting with the USACE.

Tim Allen said that the existing bridge has no shoulder, and that when vehicles break down on the bridge, they have nowhere to pull over in an emergency. Al Bowman responded that the proposed new bridge has been designed according to GDOT policy, and that the proposed 8-foot shoulder would be adequate in an emergency situation to keep traffic moving across the bridge. Ben Rabun reinforced Mr. Bowman's statement by stating that AASHTO recommends providing minimum shoulder widths in order to reduce project costs.

Mary Dills brought up the issue of scuppers being installed on the bridge. Mr. Bowman stated that this has not been addressed at this point in the project design. Ms. Dills said that a closed drainage system would be required, and that scuppers would not be allowed on the new structure. Bill Duvall said that the bridge's drainage system would be addressed in final design.

Action Items

1. Technical Assistance meeting with the SHPO to discuss replacement justification, and mitigation measures to be held in the next 2 – 4 weeks.
2. Meeting with USACE to be held in the next 3 – 4 weeks to obtain concurrence on the proposed span locations and to discuss potential mitigation measures for impacts to Bolling Hill Park.
3. Meeting between LPA and the GDOT Bridge Office to discuss the design of the bridge substructure.

Prepared by: Paul Condit
The LPA Group Incorporated
A Unit of Michael Baker Corporation
August 9, 2011

Concept Team Meeting for S.R. 53 over Chestatee River Bridge Replacement
(Sign in sheet)

1. Brad Gowen	LPA Group	770-263-9118	bgowen@LPAgroup.com
2. Al Bowman	" "	" "	ABowman@LPAgroup.com
3. Paul F. Condit	" "	" "	pfcondit@LPAgroup.com
4. Mary Best	" "	" "	mdbest@LPAgroup.com
5. Jody Woodall	HALL COUNTY AMEC/DIST. UTILITIES	770-531-6800	JWOODALL@HALLCOUNTY.ORG
6. TONY PRITCHETT	AMEC/DIST. UTILITIES	678-274-2677	AJPRITCHETT@MACTEC.COM
7. Otis Clark	OPD	(404)631-1577	OClark@DOT.ga.gov
8. Michael Johnson	Traffic Ops	(770)718-5040	m.johnson@dot.ga.gov
9. Bobby Dollar	OES-GDOT	404-631-1920	rdollar@dot.ga.gov
10. Mary Dills	USACE, Savannah	(912)422-2727	Mary.e.dills@usace.army.mil
11. Kim Coley	GDOT-DPPE	(770)532-5530	kcoley@dot.ga.gov
12. ROBERT W. MAHONEY	GDOT-DI	770-532-9520	R.MAHONEY@DOT.GA.GOV
13. Derek J. Wade	GDOT-AI	770-535-5759	Derek J. Wade
A. Tim Allen	Forsyth County	770-781-2165	TAllen@Forsythco.com

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. ,

OFFICE

DATE

P.I. No.

FROM

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER

MNGT LET DATE

MNGT R/W DATE

PROGRAMMED COST (TPro W/OUT INFLATION)

LAST ESTIMATE UPDATE

CONSTRUCTION \$

DATE

RIGHT OF WAY \$

DATE

UTILITIES \$

DATE

REVISED COST ESTIMATES

CONSTRUCTION* \$

RIGHT OF WAY \$

UTILITIES** \$

* Costs contain % Engineering and Inspection and % Construction Contingencies.

** Costs contain % contingency.

REASON FOR COST INCREASE

CONTINGENCY SUMMARY

Construction Cost Estimate: \$ (Base Estimate)

Engineering and Inspection: \$ (Base Estimate x %)

Construction Contingency: \$ (Base Estimate x %)

(The Construction Contingency is based on the Project Improvement Type in TPro.)

Total Fuel Adjustment \$ (From attached worksheet)

Total Liquid AC Adjustment \$ (From attached worksheet)

Construction Total: \$

Utility Cost Estimate: \$

Utility Contingency: \$ %

Utility Total: \$

REIMBURSABLE UTILITY COST

Utility Owner

Reimbursable Cost

AT&T

\$0

Attachments

c: Genetha Rice-Singleton, State Program Control Administrator

conceptual construction cost estimate 032712.txt
 STATE HIGHWAY AGENCY

DATE : 03/27/2012
 PAGE : 1

JOB DETAIL ESTIMATE

JOB NUMBER : 0007021 SPEC YEAR: 01
 DESCRIPTION: SR 53 OVER CHESTATEE RIVER (LAKE LANIER)

COST GROUPS FOR JOB 0007021

COST GROUP	DESCRIPTION	QUANTITY	PRICE	AMOUNT	ACTIVE?
ASPH	ASPHALT (TN)	4555.833	64.26882	292798.01	Y
BASE	BASE/AGGREGATE (TN)	7620.501	44.66416	340363.28	Y
STRO	STRUCTURES, OTHER (SF)	43250.000	142.50000	6163125.00	Y
DRNGPCTO	DRAINAGE (PERCENT OF JOB)	119457.957	2.50000	298644.89	Y
EROCPTO	EROSION CONTROL (PERCENT OF JOB)	119457.957	6.00000	716747.74	Y
ERTHPCTO	EARTHWORK (PERCENT OF JOB)	119457.957	15.00000	1791869.36	Y
GDRLPCTO	GUARDRAIL/BARRIER (PERCENT OF JOB)	119457.957	0.50000	59728.98	Y
PFPL	PREFORMED PLASTIC STRIPES	0.640	22342.17456	14298.99	Y
THSL	THERMO PLASTIC LINEAR PAVEMENT MARKING	14200.000	3.07592	43678.06	Y
RPMK	RAISED PAVEMENT MARKING	150.000	4.33083	649.62	Y
SIGNPCTO	SIGNS (PERCENT OF JOB)	119457.957	0.20000	23891.59	Y
TRFT	TRAFFIC CONTROL-TEMPORARY (LS)	1.000	75000.00000	75000.00	Y
WALL	WALLS (SF)	11500.000	50.00000	575000.00	Y
WALL	WALLS (SF)	11000.004	50.00000	550000.20	Y
RMVL	REMOVALS (LS)	1.000	1000000.00000	1000000.00	Y
ACTIVE COST GROUP TOTAL				11945795.72	
INFLATED COST GROUP TOTAL				11945795.72	

TOTALS FOR JOB 0007021

ESTIMATED COST: 11945795.72
 CONTINGENCY PERCENT (0.0): 0.00
 ESTIMATED TOTAL: 11945795.72

PROJ. NO.

CSBRG-0007-00(021)

CALL NO.

P.I. NO.

7021

DATE

3/27/2012

INDEX (TYPE)

DATE INDEX

REG. UNLEADED

Mar-12 \$ 3.679

DIESEL

\$ 4.070

LIQUID AC

\$ 614.00

Link to Fuel and AC Index:

<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

LIQUID AC ADJUSTMENTS

PA=(((APM-APL)/APL)xTMTxAPL

Asphalt

Price Adjustment (PA)

99099.6

\$

99,099.60

Monthly Asphalt Cement Price month placed (APM)

982.40

\$

982.40

Monthly Asphalt Cement Price month project let (APL)

614.00

\$

614.00

Total Monthly Tonnage of asphalt cement (TMT)

269

ASPHALT

AC ton

Leveling

0

12.5 OGFC

0

12.5 mm

42.5

9.5 mm SP

0

25 mm SP

170

19 mm SP

56.5

269

BITUMINOUS TACK COAT

Price Adjustment (PA)

1,629.78

\$

1,629.78

Monthly Asphalt Cement Price month placed (APM)

982.40

\$

982.40

Monthly Asphalt Cement Price month project let (APL)

614.00

\$

614.00

Total Monthly Tonnage of asphalt cement (TMT)

4.42395395

Bitum Tack

Gals

gals/ton

tons

1030

232.8234

4.42395395

PROJ. NO.

CSBRG-0007-00(021)

CALL NO.

P.I. NO.

7021

DATE

3/27/2012

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)

0

\$

Monthly Asphalt Cement Price month placed (APM)

982.40

Monthly Asphalt Cement Price month project let (APL)

614.00

Total Monthly Tonnage of asphalt cement (TMT)

0

Max. Cap

60%

\$

\$

Bitum Tack

SY

Gals/SY

Gals

gals/ton

tons

Single Surf. Trmt.

0.20

0

232.8234

0

Double Surf. Trmt.

0.44

0

232.8234

0

Triple Surf. Trmt

0.71

0

232.8234

0

0

TOTAL LIQUID AC ADJUSTMENT

\$

100,729.38

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 08/03/2011
Revised:

Project: CRBRG-0007-00(021)
County: Forsyth/Hall County
PI: 7021

Description: SR 53 over Chestatee River (Lake Lanier)
Project Termini: Bridge Replacement

Parcels: 10 Existing ROW: Varies
Required ROW: Varies

Land and Improvements \$1,571,250.00

Proximity Damage	\$0.00
Consequential Damage	\$0.00
Cost to Cures	\$0.00
Trade Fixtures	\$0.00
Improvements	\$85,000.00

Valuation Services \$25,000.00

Legal Services \$81,750.00

Relocation \$20,000.00

Demolition \$0.00

Administrative \$87,500.00

TOTAL ESTIMATED COSTS \$1,785,500.00

TOTAL ESTIMATED COSTS (ROUNDED) \$1,786,000.00

Preparation Credits	Hours	Signature

Prepared By:

Liz Shore Alexander

CG#:

8/03/2011

Approved By:

Liz Shore Alexander

CG#:

286999

8/03/2011

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
Land and Improvements	Agriculture	Residential	Commercial	Industrial
1 Estimate Low (ac)	\$0.00	\$75,000.00	\$0.00	\$0.00
2 Estimate High (ac)	\$0.00	\$250,000.00	\$0.00	\$0.00
3 Estimate Used (ac)	\$0.00	\$175,000.00	\$0.00	\$0.00
4 Fee Simple Area (ac)	0.00	5.50	0.00	0.00
5 Fee Simple Estimate	\$0.00	\$962,500.00	\$0.00	\$0.00
6 Perm Esmt Area (ac)	0.00	0.00	0.00	0.00
7 Perm Esmt Factor	0%	0%	0%	0%
8 Perm Esmt Estimate	\$0.00	\$0.00	\$0.00	\$0.00
9 Temp Esmt Area (ac)	0.00	0.00	0.00	0.00
10 Temp Esmt Factor	0%	0%	0%	0%
11 Temp Esmt Estimate	\$0.00	\$0.00	\$0.00	\$0.00
12 Proximity Damages	\$0.00	\$0.00	\$0.00	\$0.00
13 Consequential Damages	\$0.00	\$0.00	\$0.00	\$0.00
14 Cost to Cures	\$0.00	\$0.00	\$0.00	\$0.00
15 Improvements	\$0.00	\$85,000.00	\$0.00	\$0.00
16 Trade Fixtures	\$0.00	\$0.00	\$0.00	\$0.00
17				
18 PROPERTY TYPE TOTALS	\$0.00	\$1,047,500.00	\$0.00	\$0.00
19	SUB TOTAL PROPERTY TYPES			\$1,047,500.00
20	Counter Offers and Condemnation Increases			\$523,750.00
21				
22	GRAND TOTAL LANDS AND IMPROVEMENTS			\$1,571,250.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
Valuation Services	Agriculture	Residential	Commercial	Industrial
1 Appraisals (# of Parcels)	0	10	0	0
2 Estimated Fees (per Parcel)	\$0.00	\$2,000.00	\$0.00	\$0.00
3 TOTAL APPRAISALS	\$0.00	\$20,000.00	\$0.00	\$0.00
4 Sign Estimates	0	0	0	0
5 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
6 TOTAL SIGN ESTIMATES	\$0.00	\$0.00	\$0.00	\$0.00
7 Specialty Reports	0	0	0	0
8 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
9 TOTAL SPECIALTY REPORTS	\$0.00	\$0.00	\$0.00	\$0.00
10 Septic/Well Reports	0	0	0	0
11 Estimated Fees	\$0.00	\$0.00	\$0.00	\$0.00
12 TOTAL SEPTIC/WELL REPORTS	\$0.00	\$0.00	\$0.00	\$0.00
13				
14				
15				
16 TOTAL VALUATION FEES	\$0.00	\$20,000.00	\$0.00	\$0.00
17	SUB TOTAL VALUATION SERVICES			\$20,000.00
18	Updates and Incidentals (Min \$2,500 or 25%)			\$5,000.00
19	GRAND TOTAL VALUATION SERVICES			\$25,000.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
Legal Services	Parcels	Estimated Fees		TOTALS
1 Meeting with Attorney	10	\$125.00		\$1,250.00
2 Preliminary Titles	10	\$200.00		\$2,000.00
3 Closing and Final Title	10	\$300.00		\$3,000.00
4 Recording Fees	10	\$50.00		\$500.00
5 Condemnation Filing	2	\$5,000.00		\$10,000.00
6 Litigation Costs	2	\$25,000.00		\$50,000.00
7 Updates and Incidentals	2	\$7,500.00		\$15,000.00
8				
9				
10				
11				
12				
13				
14				
15				
16				
17		GRAND TOTAL LEGAL SERVICES		\$81,750.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
	Displacements	Estimated Costs		TOTALS
1	Business Displacement	\$15,000.00		\$0.00
2	Residential Tenant	\$20,000.00		\$0.00
3	Residential Owner	\$40,000.00		\$0.00
4	Pro-Rata Taxes	10	\$1,000.00	\$10,000.00
5	Property Pin Replacement	10	\$1,000.00	\$10,000.00
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL RELOCATION			\$20,000.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
	Demolition	Items/Improvements	Estimated Costs	TOTALS
1	Residential Structures		\$15,000.00	\$0.00
2	Commercial Structures		\$25,000.00	\$0.00
3	Hotels/Apartments		\$60,000.00	\$0.00
4	UST's - Dispensers		\$50,000.00	\$0.00
5	Billboards		\$8,000.00	\$0.00
6	Signs - Light Standards		\$1,500.00	\$0.00
7	Water Vaults		\$15,000.00	\$0.00
8	Gas/Water Service Separation		\$2,500.00	\$0.00
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL DEMOLITION			\$0.00

Georgia Department of Transportation
Preliminary ROW Cost Estimate Worksheet

Project/County/PI

CRBRG-0007-00(021) Forsyth/Hall County

7021

	A	B	C	D
	Parcels	Man hours per Parcel		TOTALS
1	Pre-Acquisition	10	40	\$20,000.00
2	Acquisition	10	100	\$50,000.00
3	Relocation		50	\$0.00
4	Administrative Appeals	3	50	\$7,500.00
5	Post-Acquisition	2	100	\$10,000.00
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17	GRAND TOTAL INHOUSE			\$87,500.00

Bowman, Al

From: Ferguson, Allen [aferguson@dot.ga.gov]
Sent: Monday, October 17, 2011 10:47 AM
To: Bowman, Al
Cc: Gowen, Brad; Clark, Otis; Dykes, Jason; ajpritchett@mactec.com
Subject: RE: SR 53 PI 0007021 Utility relocation cost

Categories: Important

SR 53 PI 0007021 , Hall/Forsyth Co.
Utility relocation cost

Al,
AT&T is attached to the existing bridge and relocations are non reimbursable. AT&T will need space to attach to the new bridge.

Thanks

Allen Ferguson
District Utilities Engineer
Georgia Department of Transportation
Gainesville Utilities Office
O: 770-532-5510
C: 678-630-2025
aferguson@dot.ga.gov

*Department of Transportation
2505 Athens Highway, S.E.
Gainesville, GA 30507*

From: Bowman, Al [<mailto:ABowman@lpagroup.com>]
Sent: Wednesday, October 05, 2011 3:38 PM
To: Ferguson, Allen
Cc: Gowen, Brad; Clark, Otis
Subject: FW: SR 53 PI 0007021 Utility relocation cost

Allen,

We are trying to wrap up the concept report and need a utility cost estimate. Since AT&T is the only utility and it is on the ROW by convenience, can we assume there will be no utility relocation costs for the project?

Thanks,
Al

Albert W. Bowman, P.E.

THE LPA GROUP INCORPORATED a unit of the Michael Baker Corporation

3595 Engineering Drive Norcross, Georgia 30092

WETLANDS AND OPEN WATERS MITIGATION WORKSHEETS

ADVERSE IMPACT FACTORS

Factor	Options						
Dominant Effect	Fill 2.0	Dredge 1.8	Impound 1.6	Drain 1.4	Flood 1.2	Clear 1.0	Shade 0.5
Duration of Effects	7+ years 2.0	5-7 years 1.5	3-5 years 1.0	1-3 years 0.5	< 1 year 0.1		
Existing Condition	Class 1 2.0	Class 2 1.5	Class 3 1.0	Class 4 0.5	Class 5 0.1		
Lost Kind	Kind A 2.0	Kind B 1.5	Kind C 1.0	Kind D 0.5	Kind E 0.1		
Preventability	High 2.0	Moderate 1.0	Low 0.5	None 0			
Rarity Ranking	Rare 2.0	Uncommon 0.5	Common 0.1				

† These factors are determined on a case-by-case basis.

REQUIRED MITIGATION CREDITS WORKSHEET

Factor	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Dominant Effect	2.0	1.8				
Duration of Effect	2.0	2.0				
Existing Condition	2.0	2.0				
Lost Kind	1.0	1.0				
Preventability	0.5	0.5				
Rarity Ranking	0.1	0.1				
Sum of r Factors	$R_1 = 7.6$	$R_2 = 7.4$	$R_3 =$	$R_4 =$	$R_5 =$	$R_6 =$
Impacted Area	$AA_1 = 0.21$	$AA_2 = 0.21$	$AA_3 =$	$AA_4 =$	$AA_5 =$	$AA_6 =$
$R \times AA =$	1.6	1.55				

Total Required Credits = $\sum (R \times AA) =$

3.15

$3.15 \times 17,000 / \text{CREDIT} = \$53,550$

U.S. Army Corps of Engineers
Lake Lanier Project Impacts Calculation Model

Project Name:

Replacement of the SR 53 Bridge over the Chestatee River/Lake Lanier

Impact Factor (per acre)							
Type of Request	Modify existing project 0.5				New Easement Acquisition 1.0		
Elevation	Below 1073 1.5		1073 to 1085 1.0			Above 1085 0.5	
Existing Habitat	Open Water 1.5	Forested Wetland 1.25	Emergent / scrub-shrub wetland 1.0	Mixed Hardwood / Pine 0.75	Planted Pine 0.5	Grassed / Maintained 0.25	Paved / Gravel Surface 0
Type of Impact	Blasting 1.0		Trench/Open Cut 0.75	Clearing 0.5	Contained-Construction 0.25	No construction Impact 0	
Aesthetic Impact	Visual/Viewshed impact 1.5				Underground/None 0		
Protected Species	Federal and State Threatened and Endangered Species present Not Allowed				Protected Species present but impact allowed 2		None 0
Cultural Resources	Significant Cultural Resources present Not Allowed				Cultural Resources present but impact allowed 2		None 0
Duration of Easement	0 to 1 Year 0.1		1 to 15 Years 0.25		16 to 35 Years 0.5		36 to 50 Years 0.75
Post Construction Conditions	Underwater structures to remain in place 2		Land-based structures to remain in place 1	Return to Preconstruction contours and stabilize 0.5		Return to Preconstruction conditions 0	

Proposed Impact Worksheet							
Location Name	Area 1 (Below 1073)	Area 2 (Between 1073 and 1085)	Area 3 (Above 1085)	Area 4	Area 5	Area 6	Area 7
Factor							
Type of Request	1.00	1.00	1.00				
Elevation	1.50	1.00	0.50				
Existing Habitat	1.50	0.75	0.75				
Type of Impact	0.25	0.50	0.50				
Aesthetic Impact	0.00	1.50	1.50				
Protected Species	0.00	0.00	0.00				
Cultural Resources	0.00	0.00	2.00				
Duration of Easement	0.75	0.75	0.75				
Post Construction Conditions	0.00	0.50	0.50				
Sum of Factors (M)	5.00	6.00	7.50	0.00	0.00	0.00	0.00
Impacted Area in acres (A)	0.25	1.26	0.12				
MxA	1.25	7.56	0.90	0.00	0.00	0.00	0.00
Total Environmental Exchange Impact							9.71

Area where information is to be input; uses blue numbers

Cash Buy Out Option (1.25 factor for management fee)

1) One exchange unit is equal to:

**GEORGIA
DEPARTMENT OF TRANSPORTATION**

INTERDEPARTMENT CORRESPONDENCE

FILE CSRG-0007-00(021) **OFFICE** Planning
 Hall & Forsyth Counties
 P.I. # 0007021

DATE October 22, 2010

FROM Angela T. Alexander, State Transportation Planning Administrator

TO Bobby K. Hilliard, P.E., State Program Delivery Engineer
 Attention: Otis Clark

SUBJECT TRAFFIC ASSIGNMENTS for S.R. 53 @ Chestatee River.

We are furnishing estimated Traffic Assignments for the above project as follows:

TC # 117-0039

2009 ADT = 10,600
2017 ADT = 12,500
2037 ADT = 18,000
D = 60%
K = 8%
T = 7%
24 HR. T. = 10%
S.U. = 4%
COMB. = 6%

If you have any questions concerning this information please contact Abby Ebodaghe at (404) 631-1923.

ATA/AFE

Bridge Inventory Data Listing

Parameters: Bridge Serial Num

Structure ID: 117-0010-0

Forsyth

SUFF. RATING: 39.45

Location & Geography

Structure ID:

200 Bridge Information:

*6A Feature Int:

*6B Critical Bridge:

*7A Route No Carried:

*7B Facility Carried:

9 Location:

2 Dot District:

207 Year Photo:

*91 Inspection Frequency:

92A Fract Crit Insp Freq:

92B Underwater Insp Freq:

92C Other Spc. Insp Freq:

*4 Place Code:

*5 Inventory Route(O/U):

Type:

Designation:

Number:

Direction:

*16 Latitude:

*17 Longitude:

98 Border Bridge:

99 ID Number:

*100 STRAHNET:

12 Base Highway Network:

13A LRS Inventory Route:

13B Sub Inventory Route:

101 parcel Structure:

*102 Direction of Traffic:

*264 Road Inventory Mile Post:

*208 Inspection Area:

Engineer's Initials:

* Location ID No:

117-0010-0

06

CHESTATEE R (LK LANIER)

0

SR000053

BOLLING BRIDGE

FORSYTH-HALL COLINE

1

2011

24 Date: 08/26/2011

1 Date: 08/26/2011

2 Date: 08/21/2007

0 Date: 09/30/2008

00000

1

3

1

00053

0

34 18.7402 HMMS Prefix:SR

83 -56.9817 HMMS Suffix:00 MP:4.89

000%Shared:00

0000000000000000

0

1

1171005300

0

N

2

004.85

1

sgm

117-00053D-004.89E

*104 Highway System:

*26 Functional Classification:

*204 Federal Route Type:

105 Federal Lands Highway:

*110 Truck Route:

2006 School Bus Route:

217 Benchmark Elevation:

218 Datum:

*19 Bypass Length:

*20 Toll:

*21 Maintenance:

*22 Owner:

*31 Design Load:

37 Historical Significance:

205 Congressional District:

27 Year Constructed:

106 Year Reconstructed:

33 Bridge Medium:

34 Skew:

35 Structure Flared:

38 Navigation Control:

213 Special Steel Design:

267 Type of Paint:

*42 Type of Service Or:

Type of Service Under:

214 Movable Bridge:

203 Type Bridge:

259 Pile Encasement

*43 Structure Type Main:

45 No.Spans Main:

44 Structure Type Appr:

46 No Spans Appr:

226 Bridge Curve Horz

111 pier Protection

107 Deck Structure Type:

108 Wearing Structure Type:

Membrane Type:

Deck Protection:

Signs & Attachments

225 Expansion Joint Type:

242 Deck Drains:

243 Parapet Location:

Height:

Width:

238 Curb Height:

Curb Material:

239 Handrail

*240 Medium Barrier Rail:

241 Bridge Median Height:

* Bridge Median Width:

230 Guardrail Loc. Dir. Rear:

Fwrdr:

Oppo. Dir. Rear:

Oppo. Fwrdr:

244 Approach Slab

224 Retaining Wall:

233 Posted Speed Limit:

236 Warning Sign:

234 Delineator:

235 Hazzard Boards:

237 Utilities Gas:

Water:

Electric:

Telephone:

Sewer:

247 Lighting Street:

Navigation:

Aerial:

*248 County Continuity No.:

05

1

0

0

0

1

5

5.5

0

0

0

0

3

3

0

0

0

0

0

55

1.00

1.00

1

00

00

00

32

00

0

0

0

00



Bridge Inventory Data Listing

Parameters: Bridge Serial Num

Structure ID: 117-0010-0

Programming Data

201 Project No: CORP OF ENGINEERS
 202 Plans Available: 4
 249 Prop Proj No: CSSTP-M004-00(058)
 250 Approval Status: 0000
 251 PI Number: M004058
 252 Contract Date: 02/01/1901
 260 Seismic No: 00000
 75 Type Work: 31 1
 94 Bridge Imp. Cost: \$8,756
 95 Roadway Imp. Cost: 289
 96 Total Imp Cost: 10128
 76 Imp Length: 001057
 97 Imp Year: 1980
 114 Future ADT: 015945 Year: 2030

Hydraulic Data

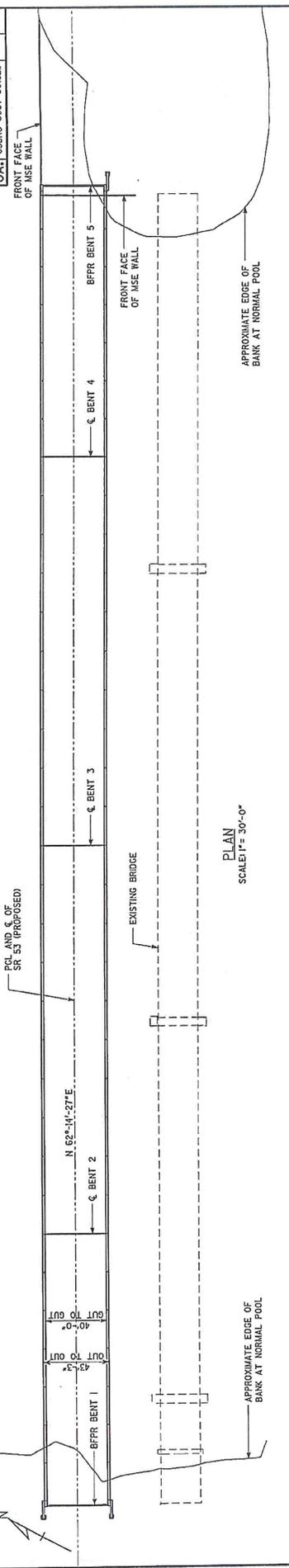
215 Waterway Data:
 High Water Elev: 0000.0 Year: 1900
 Flood Elev: 0000.0 Freq: 00
 Avg Streambed Elev: 0000.0
 Drainage Area: 00000
 Area of Opening: 000000
 113 Scour Critical: U
 216 Water Depth: 81.0 Br. Height: 28.1
 222 Slope Protection: 1
 221 Slope Protection: 0 Fwd: 0
 219 Fender System: 0
 220 Dolphin: 0
 223 Current Cover: 000
 Type: 0
 No. Barrels: 0
 * Width: 0.00 Height: 0.00
 * Length: 0 Apron: 0
 265 U/W Insp. Area: 1 Diver: WSR
 Location ID No: 117-00053D-004.89E

Measurements:

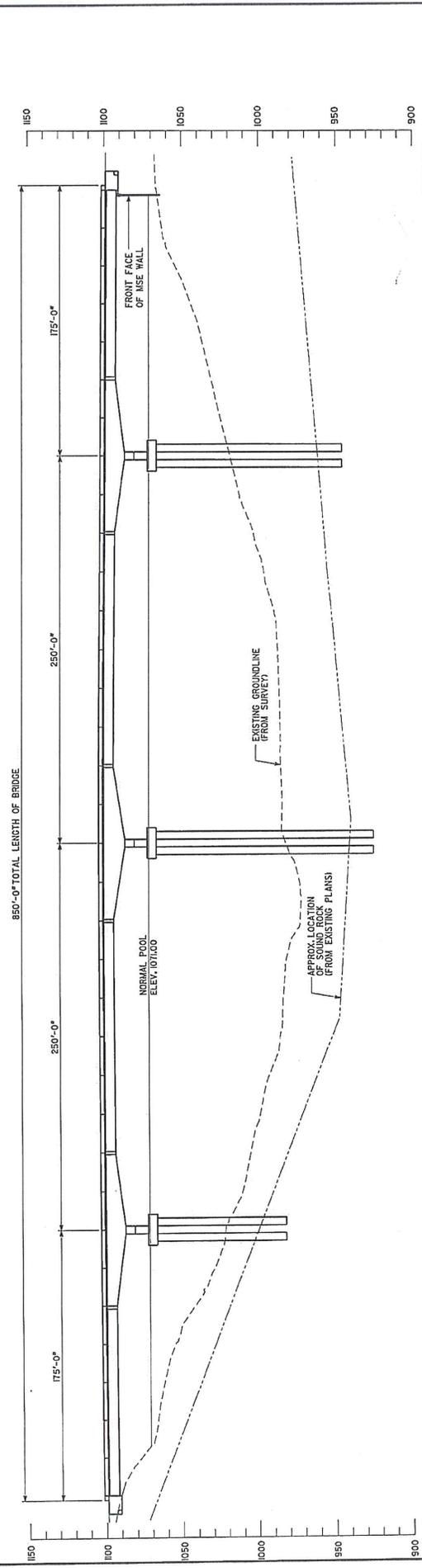
*29 ADT: 010630 Year: 2010
 109% Trucks: 0
 *28 Lanes On: 02 Under: 00
 210 No. Tracks On: 00 Under: 00
 *48 Max. Span Length: 0244
 *49 Structure Length: 800
 51 Br. Rwdy. Width: 25.90
 52 Deck Width: 30.20
 *47 Tot. Horiz. Cl: 26
 50 Curb / Sidewalk Width: 1.50 / 1.50
 32 Approach Rdwy. Width: 026
 *29 Shoulder Width: 1.50 Type: 2 Rt: 1.30
 Rear Lt: 1.70 Type: 2 Rt: 1.30
 Fwd. Lt:
 Permanent Width:
 Rear: 23.90 Type: 2
 23.10 Type: 2
 0 Fwd: 0
 Intersection Rear:
 36 Safety Features Br. Rail: 2
 Transition: 2
 App. G. Rail: 2
 App. Rail End: 1
 53 Minimum Cl. Over: 14' 10"
 Under:
 *228 Minimum Vertical Cl
 Act. Oddm Dir: 14' 10"
 Oppo. Dir: 99' 99"
 Posted Oddm. Dir: 00' 00"
 Oppo. Dir: 00' 00"
 55 Lateral Undercl. Rt: N 0 0
 56 Lateral Undercl. Lt: 0.00
 *10 Max. Min Vert Cl: 14' 10" Dir: 3
 39 Nav Vert Cl: 000 Horiz: 0000
 116 Nav Vert Cl Closed: 000
 245 Deck Thickness Main Deck Thick Approach: 6.00
 246 Overlay Thickness: 8.00
 212 Year Last Painted: 0.00
 Sup: 1997 Sub: 0000

65 Inventory Rating Method: 2
 63 Operating Rating Method: 2
 66 Inventory Type: 2 Rating: 22
 64 Operating Type: 2 Rating: 22
 231 Calculated Loads:
 H-Modified: 20 0
 HS-Modified: 25 0
 Type 3: 26 0
 Type 3s2: 39 0
 Timber: 36 0
 Piggyback: 40 0
 261 H Inventory Rating: 15
 262 H Operating Rating: 25
 67 Structural Evaluation: 5
 58 Deck Condition: 5
 59 Superstructure Condition: 5
 *227 Collision Damage: 2
 60A Substructure Condition: 5
 60B Scour Condition: 8
 60C Underwater Condition: 5
 71 Waterway Adequacy: 9
 61 Channel Protection Cond.: 7
 68 Deck Geometry: 2
 69 Under/Cir. Horz/Vert: N
 72 Appr. Alignment: 6
 62 Culvert: N
 Posting Data
 70 Bridge Posting Required: 5
 41 Struct Open, Posted, CL: A
 *103 Temporary Structure: 0
 232 Posted Loads
 H-Modified: 00
 HS-Modified: 00
 Type 3: 00
 Type 3s2: 00
 Timber: 00
 Piggyback: 00
 253 Notification Date: 02/01/1901
 258 Fed Notify Date: 2/11/1901 12:00:00AM

DATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	CSBRC-0007-00020		



PLAN
SCALE 1" = 30'-0"



ELEVATION
SCALE 1" = 30'-0"

BRIDGE NO. 1

THE LPA GROUP, INCORPORATED
1000 W. BROADWAY, SUITE 200
ATLANTA, GEORGIA 30334

THE LPA GROUP, INCORPORATED
1000 W. BROADWAY, SUITE 200
ATLANTA, GEORGIA 30334

GEORGIA
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION-OFFICE OF BRIDGES AND STRUCTURES

STRUCTURE ALT B - SPICED BULB-T
SR 53 OVER CHESTATEE RIVER (LAKE LANIER)
FORSYTH/HALL COUNTY CSBRG-0007-00020

SCALE: AS SHOWN

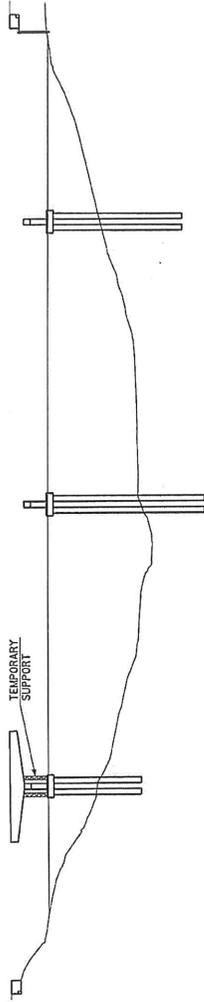
DRAWING NO. BRIDGE SHEET

DATE

REVISIONS

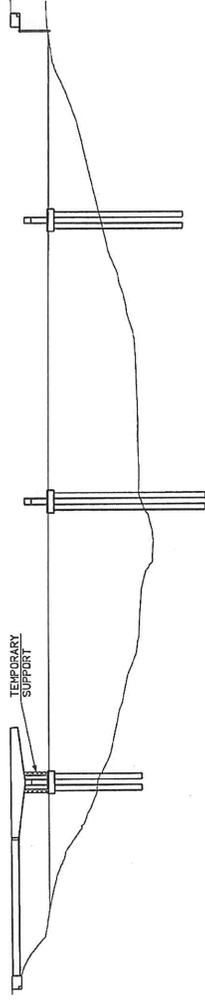
APPROVED: BFR
CHECKED: ANB
DESIGNED: NEI
DATE: APRIL 2001

SHEET NO.	PROJECT NUMBER	SHEET TOTAL
CA	CSBRG-0007-00021	2/2



STAGE 1
SCALE 1" = 5'-0"

1. ERECT TEMPORARY SUPPORT TOWERS ON PERMANENT FOOTINGS FOR PIER 1.
2. ERECT HAUNCH GIRDER SECTION ON PIER AND TIE-DOWN TO PERMANENT FOOTING USING TEMPORARY POST-TENSIONING BARS.



STAGE 2
SCALE 1" = 5'-0"

1. ERECT SPAN DROP-IN GIRDER SECTION AND SUPPORT OFF OF THE END OF THE HAUNCH GIRDER SECTION USING STEEL STRONGBACKS.
2. ERECT TEMPORARY POST-TENSIONING BARS ACROSS CLOSURE JOINT.
3. STRESS POST-TENSIONING BARS ACROSS CLOSURE JOINT.

BRIDGE NO. 1



THE LPA GROUP INCORPORATED
A GEORGIA PROFESSIONAL ENGINEERING FIRM
1000 N. W. 10TH AVENUE
SUITE 200
FORT LAUDERDALE, FL 33304

GEORGIA

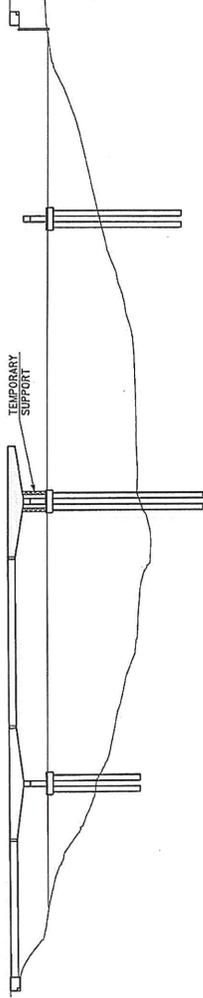
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION-OFFICE OF BRIDGES AND STRUCTURES

STRUCTURE ALT B - ERECTION PLAN
SR 53 OVER CHESTATEE RIVER (LAKE LANIER)
FORSYTH/HALL COUNTY CSBRG-0007-00021

DATE	REVISIONS	BY

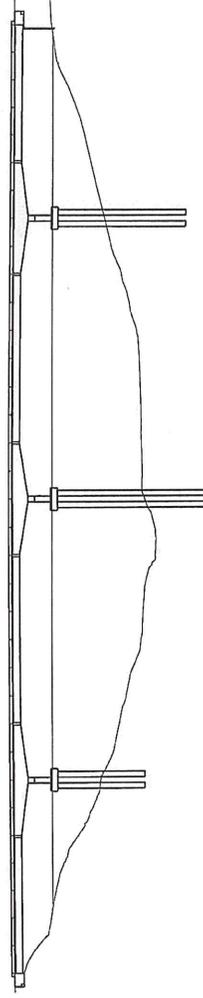
DRAWING NO.	APRIL 2011
BRIDGE SHEET	NO. 001

DATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
CA	CSBRG-0007-00020		



STAGE 3
SCALE: 1" = 50'-0"

1. ERECT TEMPORARY SUPPORT TOWERS ON PERMANENT FOOTING FOR PIER 2.
2. ERECT HAUNCH GIRDER SECTION ON PIER 2 AND TIE-DOWN TO PERMANENT FOOTING.
3. ERECT SPAN 2 BROW-IN ORDER SECTION AND SUPPORT OFF OF THE END OF SPAN 1. CAST CONCRETE JOINT CONCRETE HAS REACHED THE REQUIRED STRENGTH.
4. STRESS POST-TENSIONING BARS ACROSS BOTH CLOSURE JOINTS.
5. DE-TENSION TEMPORARY POST-TENSIONING BARS AT PIER 1 AND REMOVE TEMPORARY SUPPORT TOWERS AT PIER 1.



STAGE 4
SCALE: 1" = 50'-0"

1. REPEAT PROCEDURE FROM STAGE 3 FOR THE REMAINING SPANS.
2. POUR DECK ACCORDING TO THE PRESCRIBED SEQUENCE.
3. CAST CURBS, END BENT BACKWALLS AND APPROACH SLABS.
4. CAST BARRIER RAILS, END BENT BACKWALLS AND APPROACH SLABS.

BRIDGE NO. 1

THE LPA GROUP, INCORPORATED
LPA GROUP, INCORPORATED
1000 W. BROADWAY
ATLANTA, GEORGIA 30334

THE LPA GROUP, INCORPORATED
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ATLANTA, GEORGIA 30334

DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION-OFFICE OF BRIDGES AND STRUCTURES

GEORGIA

STRUCTURE ALT B - ERECTION PLAN
SR 53 OVER CHESTATEE RIVER (LAKE LANIER)
FORSYTH/HALL COUNTY CSBRG-0007-00020

SCALE: AS SHOWN

APRIL, 2011

DESIGNED BY: [Blank]
CHECKED BY: [Blank]
DRAWN BY: [Blank]

DATE

REVISIONS

DRAWING NO.
BRIDGE SHEET

Meeting Notes
GDOT Project CSBRG-0007-00(021), Forsyth & Hall Counties P.I. 0007021
SR 53 over the Chestatee River Bridge Replacement Project
U.S. Army Corps of Engineers – Lake Lanier Office, November 5, 2010

Attendees:

Jeff Emmert – USACE (Lake Lanier)
Justin Hammonds – USACE (Lake Lanier)
Mary Dills – USACE (Savannah District)
Al Bowman – LPA/Baker
Mary Best – LPA/Baker
Brad Gowen – LPA/Baker
Paul Condit – LPA/Baker

Introduction

The meeting began with introductions. Paul Condit distributed the meeting agenda (attached) and stated the purpose of the meeting: (1) to familiarize USACE representatives with the project; (2) to establish a point of contact between each firm/agency; (3) to define the roles and responsibilities for each person involved with the project; (4) to come up with a Section 404 permitting strategy that will allow for the most efficient project design and keep the project on schedule; and (5) to discuss possible public outreach strategies.

Project Concept

Al Bowman provided the need and purpose for the project and discussed the most current engineering concept. The purpose of the project is to replace the structurally deficient and functionally obsolete SR 53 bridge over the Chestatee River (Lake Lanier). The existing bridge's sufficiency rating scored at a level of a bridge that needs replacement (39.45). If a bridge has a sufficiency rating below 50 and is considered functionally obsolete or structurally deficient, the structure is eligible for federal bridge replacement funding.

The current project concept proposes the construction of a new two-lane structure just north of the existing bridge's location. There are no GDOT-acceptable detour routes available for this stretch of SR 53; therefore, traffic must be maintained along the roadway throughout project construction. Due to the potential for a future SR 53 widening project, the new bridge would be constructed at a location that provides the minimum separation requirements needed to accommodate a future four-lane facility. Right-of-way is currently scheduled for 2012, and the project is scheduled to be let to construction in 2014.

Point of Contact

Jeff Emmert will be the main point of contact for the USACE – Lake Lanier Office, and he is currently responsible for right-of-way and easement concerns as they relate to this project and USACE property at Lake Lanier. Mary Dills will be the USACE project manager for this project because this proposal is a GDOT-sponsored project. Al Bowman is the LPA/Baker project manager and will be the main point of contact regarding project-related business. Mary Best is the environmental project manager for LPA/Baker and will be in charge of all environmental special studies, environmental approvals, and permitting issues related to the project.

Right-of-Way and Easement Concerns

Jeff Emmert provided the group with a map of the project area that displayed the current classification of all the land adjacent to the project site. According to the graphic, the land on both the east side and west

side of the SR 53 bridge is classified as “recreational.” The property on the east side of the crossing is known as Little Hall Park; however, the property to the west is not officially named (Boling Hill Park, unofficial name). It was not known previously that the property to the west is considered parkland. Jeff Emmert expressed some concern regarding having to relocate the bridge footprint to the north. He stated that any changes to the current easement location would require mitigation separate from the mitigation required as part of the CWA Section 404 Permit. Justin Hammonds mentioned the Environmental Stewardship Provisions the USACE has used for other projects around Lake Lanier. Justin also suggested that the ESP program could potentially be used to help determine appropriate mitigation measures that could be used for impacts to the recreation areas resulting from shifting the bridge alignment to the north.

The Lake Lanier Office suggested that it may be best just to expand the existing easement to account for the shift in bridge alignment, especially if a four-lane widening project may be coming in the future. However, this project is strictly a bridge replacement project and the purchase of unneeded easement may not qualify for federal funding. Therefore, it would be in the best interest of GDOT to give the USACE back the easement it currently holds on the existing bridge alignment in exchange for the new easement it needs to construct the new bridge. The new impacts resulting from project construction would have to be accounted for through mitigation using the ESP program. According to the Lake Lanier Office, there would be no significant timeline discrepancies between doing an easement swap or easement expansion.

Impacts

Based on the current concept proposal, the Lake Lanier Office believes that the project would not impact Little Hall Park. All impacts appear to be contained on the west side of the SR 53 bridge and would be related to the proposed fill in the northwest quadrant of the project. According to Al Bowman, the additional fill is necessary because the land width on the west side of the crossing is not extensive enough to accommodate the northern shift of the new bridge. Jeff Emmert stated that the major concern for Lake Lanier management is the fact that the lake is used for flood control, and LPA is proposing fill below the flood pool level as well as the normal full pool level.

Fill placed below the 1085 elevation (flood pool capacity) requires replacement of an equivalent volume at some other location of the lake. Fill placed below the 1071 elevation (normal full pool) requires a CWA Section 404 permit and compensatory mitigation. LPA/Baker expressed concern to the USACE regarding limitations to the amount of fill allowed into Lake Lanier. In other words, is there a specific amount of fill that would raise a red flag for the USACE? Mr. Emmert responded by saying any amount of fill placed below the 1085 contour is a major concern for the USACE. It was made clear that that the amount of fill to be placed below the 1085 contour would be dug out and removed somewhere else in the lake. Mary Best asked if compensation for fill versus what is to be removed is on a one-to-one ratio, and Mr. Emmert confirmed this statement.

Mr. Bowman asked the USACE about walls versus rip rap. Walls could be used to minimize impacts where appropriate, but at a greater cost to GDOT. Mary Dills stated that the installation of rip rap is considered a bank stabilization measure, and the action does not require mitigation.

Impact calculations methods were also discussed. The level of permit required for a particular project is determined by the acreage of fill illustrated in the design plans (vertical and horizontal volume). The Savannah District is only concerned with the amount of fill placed below the 1071 elevation (Dills). She went on to say that all property above the 1071 elevation is considered uplands by the USACE.

The graphic provided by the Lake Lanier Office distinguishes three different types of property in the vicinity of the project site. Green areas are places where private docks are eligible for construction. Yellow areas are protected areas where no docks are allowed. Finally, red areas are considered recreation areas and are restricted from development. The proposed impacted area on the west side is a red, or recreational, zone. Impacts to red zone property have a higher value than land within yellow or green zones and would require more mitigation as calculated by the ESP model. The ESP value would also be

raised due to the SR 53 bridge being a structure that crosses open water. Any crossing over the lake would be considered by the USACE-Lake Lanier Office an adverse effect on the scenery of the lake.

Permitting

Mary Dills suggested that the replacement of the bridge structure itself would qualify for a Nationwide 25 Permit. Impacts associated with the approaches could be permitted with a Nationwide 14, a Nationwide 23, or a Regional Permit 96, depending upon the level of impact. Any rip rap necessary for bank stabilization would be permitted with a Nationwide 13. Since cofferdams will be needed to install the bridge pilings, a Nationwide 33 Permit for temporary impact would also be required.

The contractor will be responsible for performing side scan sonar of the bridge's substructure and the lake bottom before and after project construction. This imaging will help determine what the contractor is and is not responsible for in terms of leaving the post-construction site in the same condition as the site was pre-construction. Al Bowman wanted to know if the contractor would be responsible for cutting the existing bridge pilings below the water line or if they would need to cut them off at the lake's bottom. Jeff Emmert expected they would be required to cut them off at the bottom in order to avoid any potential navigation hazards.

Mary Dills stated that the GDOT project at Thurmond Lake required a bridge shift to the south. South Carolina requested that the abutments for the existing bridge remain in place after construction so a lookout pier could be constructed on top of them. Mr. Emmert stated that the USACE-Lake Lanier Office would not be interested in doing something similar in order to avoid the maintenance costs associated with a pedestrian bridge.

Mary Dills stated that mitigation is not required for installation of the piers, but the cofferdams would require mitigation, and a construction and demolition strategy would have to be made clear prior to issuance of the Section 404 permits.

Mitigation

Mary Best asked the USACE representatives how mitigation is typically handled when impacts to USACE-owned property result from projects around Lake Lanier. She wanted to know if mitigation is usually handled as a financial transaction, or if other services or methods are available. Jeff Emmert suggested that the USACE usually handled mitigation through financial transactions; however, there has been a recent movement towards in-kind services and other mitigation methods. For instance, Georgia Power needed to widen a transmission line corridor, so they planted food plots along their easement as a portion of their mitigation. Mr. Emmert stated that he would provide LPA with a model for the ESP program that would provide a clearer picture as to what type of mitigation GDOT would face for this particular project. It was stated that this program would produce a dollar figure and some other in-kind services that could serve as appropriate mitigation.

Mary Best mentioned that the installation of osprey nesting platforms was mentioned at the project kickoff meeting as a possible mitigation measure. The Lake Lanier Office confirmed that the SR 53 bridge does house an osprey nest that would need to be relocated as part of the project construction. Mary Dills suggested that the nest could be moved in the fall when the birds typically begin their migration south. Justin Hammonds stated that the GDNR-WRD (Scott Frazier) would need to be contacted for recommendations on how to deal with the relocation of the existing osprey nest. Mary Dills also mentioned that the GDNR-WRD could provide information on the design, cost, and purchase locations for the osprey nest platforms. The GDNR-WRD also would be able to provide guidance on how to deal with the barn swallow nests located under the existing bridge's deck.

There is no current access to the recreation area on the west side of the SR 53 bridge. Al Bowman asked if providing access to the recreation area on the west side of the bridge could be a possibility for mitigation. Paul Condit suggested that all mitigation strategies would need to be explored as part of the

Programmatic Section 4(f) analysis required as part of the environmental analysis. The result of the analysis would be a Memorandum of Understanding between the USACE, GDOT, and FHWA that describes all of the necessary mitigation required by the USACE in order to move forward with the project.

Bridge Information

Mary Dills asked if the new bridge would be higher or lower than the existing bridge. Al Bowman explained that the plan is to lower the bridge in order to reduce the amount of impacts resulting from the placement of fill into the lake. Mr. Bowman asked if the USACE has any aesthetic requirements for bridges over Lake Lanier. Mr. Emmert explained that the bridge should be as unobtrusive and have as little an impact on the lake as possible.

Justin Hammonds stated that the bridge design should be coordinated with Jeff Emmert, and the elevation of the bridge should remain the same. Jeff responded by saying that there are no regulations that dictate the required elevation of a bridge, and if lowering the bridge could reduce impacts to the lake then those options should be explored. Are their vertical or horizontal constraints tied to the requirements of the Section 10 Permit? For navigational purposes, if the clearance of the bridge is to be lowered, then a buoy system would need to be installed to aid boaters in staying within the main navigation channel. The buoy system would need to be installed prior to beginning the bridge replacement project in order to allow time for boaters to get used to the new navigation patterns through the area. Currently, there is no main navigation channel.

The main vessels crossing under this bridge are houseboats and cabin cruisers, and most of the sailboats do not use this area. The fact that there are not many sailboats in the area and the nearest bridge, the Wilkie Bridge, is much lower and smaller than this structure make lowering the new bridge a more acceptable option. Mr. Bowman stated that the beam structure for the new bridge would be below the deck, versus the current truss bridge that has its support structure above the deck. The additional impacts to the lake would be the result of having to raise the road in order to meet the existing clearance. The width between the piers of the new bridge would be no less than the existing condition. The existing width between the piers is approximately 300 feet.

Miscellaneous Discussion

The historical eligibility of the bridge came into question during the meeting. Mary Best acknowledged that Sandy Lawrence with the GDOT-OES would need to be contacted to determine the National Register of Historic Places (NRHP)-eligibility of the existing bridge.

Mary Dills stated that Lake Lanier is considered navigable by the USACE; however, the U.S. Coast Guard does not consider the lake to be a navigable waterbody. Therefore, replacement of the bridge structure is not eligible for a Nationwide 15 permit, but it is eligible for a Nationwide 25 permit.

Lighting also was a topic of discussion. It was determined that lighting would be required on any barges or platforms used for construction of the new bridge, but no permanent lighting would need to be attached to the new structure.

Mary Dills stated that all stormwater runoff on the new structure would have to be captured and piped off the deck prior to releasing it back into Lake Lanier. Dropping the runoff directly into the lake is not an option.

Preliminary plans should go through Jeff Emmert, and he is open to discussing concept options before a final project proposal is presented to GDOT.

The demolition strategy for the existing bridge would have to be coordinated and approved by the USACE Savannah District (Dills). Could the existing truss be dropped into Lake Lanier as a measure to increase fish habitat. The USACE was not sure about this proposal and suggested that Nick Jameson with GDNR-WRD, Region 2 Fisheries Management in Gainesville, GA be contacted about this proposal.

Mary Dills believes that a Stream Buffer Variance from GDNR-EPD would probably not be required due to the perpendicular nature of the crossing. She suggested that Catherine Samay with EPD be contacted regarding this issue.

Public Information Strategy

Jeff Emmert suggested contacting the Lake Lanier Association in order to get the word out to local citizens about the project. The USACE did not agree with the assessment that a PIOH would not be an effective means of getting quality feedback from the public. Although there are some seasonal residents in the area, there is a large contingency of retirees and permanent residents that would have an interest in this project. Contacting the marina upstream and the marina downstream of the project site would be another means of getting information about the project to the public.

Advertisements for any public outreach activities should be run in the in the free local paper, the Lakeside on Lanier. Pam Keene is the point of contact with this publication.

Action Items

1. USACE to provide LPA/Baker with electronic shape files containing park and land classification boundaries.
2. Jeff Emmert will provide LPA/Baker with the ESP model along with instructions.
3. LPA/Baker environmental will contact Sandy Lawrence (GDOT-OES) about the NRHP-eligibility of the existing SR 53 bridge.
4. LPA/Baker will check the bicycle lane requirements for this segment of SR 53.
5. LPA/Baker will contact GDOT about providing project information on the Department's website once a PIOH is scheduled.
6. LPA/Baker will distribute the meeting minutes to the GDOT project manager, the GDOT NEPA planner, and the GDOT ecologist.

Participants are asked to please review these meeting minutes and to provide any comments to the undersigned, for correction or clarification.

Prepared by: Paul F. Condit, Sr.
The LPA Group Incorporated
A Unit of Michael Baker Corporation
November 9, 2010

Meeting Notes
GDOT Project CSBRG-0007-00(021), Forsyth & Hall Counties P.I. 0007021
SR 53 over the Chestatee River Bridge Replacement Project
U.S. Army Corps of Engineers – Lake Lanier Office, September 15, 2011

Attendees:

Jeff Emmert – USACE
Myles Barton – USACE
Paul Liles – GDOT (Bridge Design)
Otis Clark – GDOT Project Manager (Program Delivery)
Bobby Dollar – GDOT (Environmental Services)
Al Bowman – LPA/Baker Project Manager (Structures)
Paul Murphy – LPA/Baker (Roadways)
Gordon Murphy – LPA/Baker (Environmental)
Paul Condit – LPA/Baker (Environmental)

Introduction

Otis Clark began the meeting with introductions, and Paul Condit distributed the meeting agenda (attached). After introductions were complete, Mr. Clark turned the meeting over to Al Bowman. Mr. Bowman pointed out that the project has moved forward since the November 2010 meeting with the USACE. He stated that the concept for the new bridge has been developed and a concept team meeting was held in August to provide the Georgia Department of Transportation (GDOT/Department) with an opportunity to view the proposed concept. Mr. Bowman also explained that GDOT has approved the concept, and the purpose of this meeting was to familiarize the USACE with the Department-approved concept and obtain feedback on the proposed design.

Existing Conditions

Mr. Bowman reviewed the proposed project design with the group and reiterated the need and purpose of the proposed project. He explained that the existing bridge is over 50 years old, that the structure has outlived its intended lifespan, and that the bridge has a sufficiency rating of approximately 39. Mr. Bowman also provided some details regarding the existing bridge design. He mentioned that the current structure has no redundant load carrying members, meaning that the bridge is a fracture-critical structure, and that GDOT is attempting to replace these types of structures to reduce the total collapse risk associated with fracture-critical bridges.

It was mentioned that a meeting with the Georgia Department of Natural Resources – Historic Preservation Division (GDNR-HPD) occurred on September 5th to explain why the Department is proposing to replace the old bridge instead of rehabilitating it. Mr. Bowman explained that the portal of the existing bridge is being constantly struck by oversized trucks resulting in the Department having to regularly repair the damaged portions of the bridge. Mr. Paul Liles stated that the collisions are a big issue for the Department and that the problem needs to be addressed as quickly as possible. Mr. Liles referenced the Minnesota bridge collapse as a worst-case scenario when dealing with a fracture-critical structure. Furthermore, there is another truss bridge in Louisiana that crosses over the Ohio River that is now closed due to the unsafe condition of the bridge. Mr. Liles also added that the bridge was originally designed and constructed by the USACE and the structure was later turned over to the Department as a transportation easement.

Mr. Bowman explained that the bridge is in poor condition, that some of the members in the poorest condition cannot be replaced, and that there is pack rust forming within the various cracks observed throughout the existing structure. He explained that this project has a sense of urgency to it, and the Department would like to quickly move forward with this project.

Project Schedule

Otis Clark pointed out the current schedule and funding issues surrounding the proposed project. He stated that due to the nature of this crossing (large and expansive) it takes a lot of federal and state bridge funding to complete a project of this magnitude. Mr. Clark went on further to explain the funding process for the GDOT bridge replacement projects. He stated that the project schedule must be maintained in order to ensure that the project gets the federal funding programmed for that particular fiscal year. If the project is still not ready by the end of the fiscal year for which it was programmed, the project goes to the back of the line and would need to be re-programmed by the Department.

Mr. Clark mentioned that the current schedule shows that right-of-way will be underway by December 2012, and that the project is scheduled to be let to construction by April 15, 2014. He stated that a Public Information Open House (PIOH) still needs to be held prior to official approval of the project concept report. Mr. Clark explained that the Department is looking to get feedback from the USACE during this meeting so that any issues can be addressed up front. This approach should help prevent any major obstacles from delaying the project schedule later down the road. Jeff Emmert was in agreement with Mr. Clark that the Department's approach to get input early in the process is a good idea. He explained that projects of this size can sometimes lead to lengthy coordination efforts between his office and the Mobile District Office.

Project Design

Al Bowman began the discussion of the project design by stating that SR 53 is a state route and that truck traffic is heavily dependent on this route. He mentioned that approximately 10,000 vehicles per day use this route making it imperative that the project design account for maintenance of traffic during construction. He explained that the first option was to look for possible detour routes that meet the state standard of equal to or less than 5 miles from the original crossing. Because of the presence of the lake and the existing terrain, there was no feasible route available for a state-acceptable detour for this project. Therefore, the decision was made to move forward with constructing a new bridge on new alignment and removing the old bridge upon completion of the new structure. Mr. Emmert wanted to know if the Department expects there to be any closure period for SR 53 during the construction period. Mr. Bowman and Mr. Liles agreed that the longest possible closure would be approximately 1 day.

Mr. Bowman explained that the project design took into consideration the USACE's desire to maintain a horizontal clearance in the main channel of the Chestatee River of approximately 290 linear feet. Mr. Bowman stated that the proposed design provides the same overall opening for lake travel; however, the piers of the new bridge are not located in the exact same locations of the existing piers, so the travel patterns will be different but still fully accessible. Mr. Bowman also mentioned that the truss of the existing bridge allows for a shallower superstructure below the deck. Therefore, the proposed bridge design requires that the grade of the roadway be slightly elevated in order to match the current vertical clearance of approximately 17 linear feet above Elevation (El.) 1071.

Mr. Bowman stated that the centerline of the proposed bridge is to be located approximately 68 feet to the north of the centerline of the existing bridge, to accommodate the staged construction while maintaining traffic on the existing road. The shift to north was chosen because the widest part of the finger on the east side is located to the north. The presence of Little Hall Park southeast of the crossing and the ability to reduce impacts to the lake were also reasons for shifting the alignment to the north. The project would begin just east of the SR 53 intersection with Dogwood Run, and the new bridge would be a four-span continuous beam structure approximately 850 feet long. Mr. Emmert asked about the length of the existing bridge. Mr. Bowman replied that the existing bridge is approximately 800 feet long.

Retaining walls along the north side on the east approach are being proposed in order to reduce the fill limits and the impacts to the lake. In addition, the crest of the hill along the east approach reduces motorist visibility to a substandard level, and this issue would also be addressed as a part of the project.

Mr. Emmert asked what the proposed grade change would be, and Mr. Bowman stated that the grade would be raised approximately 10-15 feet to elevate the bridge high enough to maintain the existing 17 foot vertical clearance for aquatic vehicles.

Mr. Bowman explained that total avoidance of USACE property is not possible because there is Corp property on both sides of the crossing. Mr. Emmert said that he needs to check with USACE developers and planners to get an idea of what kind of plans they may have for Bolling Hill Park. Mr. Emmert asked what type of disturbance activities would be taking place on each end of the crossing. Mr. Bowman and Mr. Liles explained that cutting would be necessary on the west end, at Bolling Hill Park, and filling would be required on the east end.

Mr. Bowman explained that the typical section of the roadway approaches would consist of two 12-foot travel lanes with 10-foot shoulders, 2-foot paved. The bridge would consist of two 12-foot travel lanes with 8-foot shoulders to meet GDOT policy standards. The bridge would be an open deck structure with a 2-foot 8-inch (2'8") tall barrier wall that will allow motorists to view the lake while traveling across the bridge. Mr. Emmert stated that the proposed bridge would resemble the SR 53 bridge over the Chattahoochee River, east of this location. He also restated that the important thing for the USACE is that the new bridge be designed to maintain the existing clearances for aquatic navigation of the lake. Mr. Bowman said that the discussions from the pre-concept meeting prompted LPA to look at maintaining the existing clearances and design the new bridge in accordance with those factors in mind. Mr. Bowman explained that the current design would cost slightly more to build, but the overall existing horizontal clearance would be maintained once the old bridge is removed.

Mr. Bowman explained that the new bridge would be constructed in sections and then each section would be tightened together by a steel cable. This style of construction allows for spans to be extended from approximately 100-140 feet to approximately 250 feet. The horizontal clearances between the four proposed piers would be approximately 175 – 250 – 250 – 175 feet. The bridge design also has some built-in beauty because the profile of the bridge has an arching look. The proposed piers would be offset from the existing piers, which would reduce the horizontal clearances until the old bridge is removed. However, the largest spacing between piers would still be approximately 175 feet, which the USACE believes is adequate for the types of vessels traveling through this area. Mr. Liles stated that all of the old bridge would be removed, including cutting the piers down to the floor of the lake. Mr. Bowman mentioned that the depth of the lake in this area could be around 100 feet, and that the foundation of the new bridge has not been decided at this point, but LPA is working with GDOT to come to a final decision.

1071 versus 1073

Mr. Bowman wanted to discuss the USACE's plans to move the normal pool level from El. 1071 to El. 1073. He stated that LPA's proposed bridge design used El. 1071 as the lake's normal pool level. Mr. Bowman understands, from the previous meeting with the USACE, that the move to El. 1073 would not be something that would take place in the near future. Mr. Emmert explained that the local Lake Lanier Office could not make that decision, but it is his impression that the move to El. 1073 is not going to happen. He suggested that the design plans should remain as is and use El. 1071 instead of El. 1073. Mr. Emmert also stated that if the new bridge had all the necessary clearances at El. 1071, then the USACE would have to consider that if it decides to move to El. 1073.

Questions/Concerns with the Plans

Mr. Bowman asked the USACE representatives if they had any concerns about the proposed design. Mr. Emmert stated that the current plans show the same vertical clearance and the same spans between pilings for the new bridge, so he feels comfortable **with moving forward with the current design.**

Mitigation

Paul Condit asked the USACE representatives if the El. 1073 referenced in the Environmental Stewardship Program (ESP) form was directly correlated to the El. 1071 used by the engineers to determine impacts to the lake. Mr. Emmert explained that the El. 1073 used on the ESP form is independent of the El. 1071 used for engineering. He stated that the number used on the ESP Form is based on the average location of the top of bank around the lake, not the normal pool elevation of the lake.

Mr. Condit also wanted to know if the mitigation calculated as part of the ESP also accounts for the mitigation required to obtain the Section 404 of the Clean Water Act permit. Mr. Emmert replied that the ESP model accounts for the property impacts, and that all Section 404 permitting issues need to be coordinated with Mary Dills on the regulatory side. Mr. Emmert also stated that he would be willing to work with Mr. Condit to fill out the ESP forms and determine the correct numbers to use on the forms. Mr. Condit explained that the completed forms would be an attachment to the Programmatic Section 4(f) Evaluation, if it is determined that one is needed for impacts to the USACE owned property on the west end of the crossing.

Mr. Emmert stated that the cash option for completing the mitigation requirements is no longer an available alternative for impacts to the lake and lake property. He mentioned that the new Chief Engineer in the Atlanta office is fond of replacement in-kind for mitigation. Mr. Bowman asked for examples of mitigation options. Mr. Emmert explained that the mitigation options are open ended and the strategy can vary from project to project. He suggested that special projects can be completed to help offset any adverse impacts to the USACE property. He also stated that the benefit does not have to be adjacent to the impacted area, but that it should probably be in the same county/vicinity of the affected location. He mentioned that the addition of fish attractors, construction of food plots for wildlife, construction of osprey nest platforms, and removal of invasive species are all examples of special mitigation projects that could be implemented. Mr. Bowman asked if the special projects needed to be handled as part of the construction contract, and Mr. Emmert confirmed.

Otis Clark was concerned with the timeframe of implementing the special projects and whether they could potentially hold up construction of the bridge replacement project. Mr. Emmert stated that a Memorandum of Agreement (MOA) would need to be in place and signed by all parties. Upon formal signature of the MOA, the easement could then be transferred to GDOT so construction may begin on the project. The special projects could be completed later, depending upon the stipulations outlined in the MOA.

Mr. Liles wanted to know what the possible liability issues could be by installing osprey nest platforms near the roadway. Mr. Emmert explained that the USACE would probably ask that the platforms be installed in a 'No Wake' area with lighter roadway traffic in the area. He cited an osprey nest platform project near Clark Bridge, where the platform was constructed in a 'No Wake' zone with little vehicle traffic in the area. Mr. Condit stated that he believes the construction of osprey nest platforms will be a required part of the mitigation strategy due to the presence of an active osprey nest on the existing bridge. He suggested that the GDNR-Wildlife Resources Division (WRD) would probably request that the nest be replaced with a platform or two in the area. Mr. Condit also mentioned that LPA had coordinated with GDNR-WRD to get some ideas where the osprey nest platforms should be installed. Todd Schneider with GDNR-WRD recommended that the platforms either be placed in the channel of the Chestatee River or on the edge of bank at Bolling Hill Park in order to help reduce nest predation. Gordon Murphy suggested adding predator exclusion devices to the platform posts to help prevent predator access if the platforms were constructed in an area that dries up from time to time. Mr. Emmert was not amiable to installing the platforms in the channel and suggested that his office had a few areas in mind that would be better sites for this type of mitigation project.

Mr. Murphy suggested that the replanting/re-establishment of native vegetation within the old easement be considered as a mitigation strategy. Mr. Emmert explained that his office would require the Department to return the old easement back to its original condition before the bridge was constructed. Mr. Liles explained that all of the bridges around Lake Lanier were constructed by the USACE and they were transferred to GDOT once construction of Lake Lanier was completed. Mr. Condit then suggested that any removal of fill at the existing bridge location should be considered mitigation. Also, re-vegetating the existing bridge area once the old bridge is removed should also be considered part of the total mitigation. Mr. Clark mentioned that this was not the original location of the SR 53 crossing of Lake Lanier and that the old crossing was located further north.

Mr. Bowman explained that Special Provisions for construction would need to be created by GDOT, and the USACE would need to agree to the details of the provisions. Mr. Murphy suggested that Special Provisions should not be a problem to pull together, and Mr. Emmert suggested that GDNR-WRD would need to provide direction on how to construct the osprey nest platforms.

Mr. Emmert mentioned the possibility of performing bank stabilization as a form of mitigation. He recognized that some bank stabilization efforts will be required as part of the project construction; however, the addition of rip rap to other areas around the lake that could use some additional bank stabilization would be considered a mitigation special project. Mr. Clark was concerned that the addition of rip rap would be considered additional fill material if it extends beyond bank stabilization. Mr. Emmert explained that rip rap is excluded from fill consideration, and the USACE would approve the addition of rip rap along the lake's banks. Mr. Murphy stated that the information shared in today's meeting will help direct the mitigation strategy moving forward.

USACE Concerns

Mr. Emmert explained that the fill on the east approach is the largest concern for the USACE. Fill placed below El. 1071 and fill placed in between El. 1071 and El. 1085 are major issues that need to be addressed. The main concern is that any fill placed in either zone requires a 1:1 replacement of the storage capacity within the same zone. For example, if 10,000 cubic yards of fill are placed below the El. 1071, and another 10,000 cubic yards of fill are placed between El. 1071 and El. 1085, then 10,000 cubic yards of material would need to be removed from below El. 1071, and another 10,000 cubic yards of material would need to be removed from between El. 1071 and El. 1085. Mr. Liles suggested that this is the major problem of the Clarks Bridge project. For that project, the construction only calls for the placement of fill material into the lake and no cut is necessary.

Mr. Liles was concerned whether or not this project calls for fill material to be placed within the lake pool at the west end of the bridge. Mr. Bowman replied that there is no need for additional fill on the west end. Mr. Liles also mentioned that dredging is not typically an issue, but restoring capacity between El. 1071 and El. 1085 can be difficult to do. Mr. Liles asked if it was the USACE's expectation that GDOT purchase additional right-of-way to replace the lost areas. Mr. Emmert explained that GDOT would be responsible for replacing the capacity on other USACE-owned property. Mr. Bowman asked if there were any zones around the lake that are designated for use as flood storage capacity replacement areas. Mr. Emmert said he would like to designate some areas around the lake that could be used in situations like this where some storage capacity replacement will be required as part of the project mitigation effort. Mr. Liles suggested that the USACE may have to lose some wooded areas in order to replace capacity between El. 1071 and El. 1085. Mr. Clark stated that there would be less timber lost if the capacity was replaced on the west side of the crossing because the lake is deeper in this area. However, bank stabilization would be the main issue if storage capacity efforts were performed in this area.

Mr. Bowman asked if restoring capacity below El. 1071 helps restore capacity in the El. 1071 to El. 1085 zone. Mr. Clark responded by saying that any capacity restored below El. 1071 becomes part of the normal pool. Therefore, storage capacity must be replaced from the same zone where it was lost. Mr. Murphy added that the regulatory side of the USACE will probably also want in-kind mitigation for the

fill impacts to the lake. Mr. Emmert said he needs the actual numbers regarding the fill required for the project.

Mobile District Involvement

Mr. Condit wanted to know when the Lake Lanier Office felt it would be necessary to get the Mobile District involved in the process. Mr. Emmert replied that the majority of the coordination would go through the Lake Lanier Office and a project package would be sent to the Mobile District for review and approval. Craig Sowers will be brought in to help coordinate the ESP model and the request of availability that goes into the package that is sent to the district. Myles Barton will review the request and send it to a project delivery team that is responsible for completing all of the environmental studies before the package goes to the district. Mr. Condit wanted to know if it might help expedite the process if LPA sent the Lake Lanier Office copies of the special studies completed as part of the NEPA process for FHWA. Mr. Barton replied that any studies done on the corridor could be sent to his office for use during the USACE's environmental documentation process. Myles also stated that the Mobile District has a 30-day review period for projects that are "cleared" by the Lake Lanier Office. Mr. Clark suggested that LPA put together a preliminary package to be reviewed by the Lake Lanier Office. By submitting something early in the process, we could get a better idea of what needs to be added to the package before sending it to the Mobile District for review and approval. Mr. Barton explained that there should not be many issues with getting the project through the Mobile District because they are used to projects coming from the Lake Lanier area.

Mr. Liles wanted to know if any threatened or endangered species are possibly in the area. Mr. Condit responded by saying that a species specific survey for the federal candidate species, Georgia aster (*Symphyotrichum georgianum*), would be completed between October and November. Mr. Murphy stated that Georgia aster is a species of concern, which is not a major issue. However, if the species is elevated to threatened or endangered and it is within the project area, there would be some issues with adversely affecting this species. Mr. Condit added that the osprey presence is a migratory bird issue and not an Endangered Species Act concern.

Technical Assistance Meeting

Mr. Condit began this segment of the meeting by recapping what had taken place at the Technical Assistance (TA) meeting between The LPA Group, the GDOT – Office of Environmental Services, the GDOT – Office of Bridge Design, and the GDNR-HPD. Mr. Condit discussed the National Register of Historic Places-eligibility status of the SR 53 bridge and that mitigation would be required in order to replace the bridge. Mr. Condit mentioned that GDOT wanted some feedback from the USACE regarding the types of mitigation measures to which they might be agreeable. Mr. Condit discussed the idea of installing a historic marker or information kiosk on the east bridge approach near the location of the existing bridge, which was discussed at the TA meeting. Mr. Emmert replied that the USACE would not be interested in putting a historic marker at this location because of the possibility of people pulling onto the side of the road to look at the marker. Mr. Emmert suggested that maybe creating a pull-off at Bolling Hill Park could be an option. Mr. Bowman stated that the USACE would be responsible for maintaining any markers or kiosks and that liability needs to be considered.

Mr. Emmert suggested that he would have to check the Master Plan for the lake to review what is being planned for the Bolling Hill Park area. He suggested that it might be in the best interest of the lake to construct an access road into the southern portion of the area. Mr. Liles replied by saying that the Department needs to know so they can be sure not to design/install walls that may need to be moved later. Mr. Emmert mentioned that the public uses the non-designated areas to fish, and the USACE does not want to see these types of areas lost because access to the lake is already limited. However, Mr. Emmert feels like the public pulling off onto the shoulder is an impact to the vegetation which becomes an erosion issue.

Mr. Condit asked if the USACE would like to be a formal consulting party in the development of the MOA for Section 106 mitigation. Mr. Emmert said that he would have to check with the Lake Lanier project management office and let them make that decision. Mr. Condit said that he would follow up with Mr. Emmert in a couple of weeks to see if a decision has been made.

Miscellaneous Discussion

Mr. Emmert asked about the utilities that are currently being carried on the existing bridge. Mr. Bowman stated that only AT&T has a line on the bridge; however, the new bridge would be able to accommodate most other utilities, if necessary. Mr. Emmert wanted to know if GDOT would be willing to assist the USACE on utility accommodations in terms of easement access. Mr. Liles replied that those issues are typically worked out between the GDOT Utilities Office and the utility company. Mr. Liles also stated that AT&T would be responsible for acquiring their own easement beyond the bridge.

Mr. Emmert requested a shapefile of the project plans and a concept layout in AutoCAD format. Paul Murphy asked what data set they typically used, and Mr. Emmert replied Georgia State Plane West. Mr. Bowman mentioned that the conversion from MicroStation to AutoCAD can lead to some line issues. Gordon Murphy suggested that he could take the MicroStation files and convert them to shapefiles by using a GIS program he has access to in Columbia, SC. Mr. Emmert stated that he needs all of the wall information, the construction limits, etc. Paul Murphy stated that he could provide all of this information.

Mr. Barton wanted to know if temporary easements would be necessary during construction. Mr. Bowman replied that temporary construction easements would be needed and that barge construction would also be used. Mr. Barton said that the temporary construction limits need to be marked on the plans that will be submitted as part of the project package. Mr. Bowman confirmed that the preliminary plans will show the temporary construction limits.

Mr. Emmert wanted to know if all of the fill resulting from construction of the old bridge would be left in place. Mr. Emmert suggested that maybe some of the fill could be removed in order to try and bring the lake back to its original contours. Mr. Clark wanted to know if the USACE has an overlap period in place for removing fill after fill has been put into the lake. Mr. Emmert replied that there is a grace period, but that an agreement letter would need to be put into place prior to placing any fill into the lake.

Action Items

1. LPA to provide Mr. Emmert with shapefiles displaying the project plans, concept layout, wall information, construction limits, and temporary construction limits.
2. LPA to work with Mr. Emmert's office to complete the ESP forms and get a better idea of what mitigation will be required for this project.
3. LPA to put together a preliminary project package that includes all of the NEPA special studies reports completed during the NEPA process for FHWA. This package will be completed once the Assessment of Effects for cultural resources has been approved by the GDOT and SHPO and the Ecology Resources Assessment of Effects Report has been approved by the GDOT.
4. Mr. Emmert will check with the Lake Lanier project management office to determine if the USACE would like to be a formal consulting party regarding the MOA to be implemented as part of the Section 106 mitigation process..

Prepared by: Paul F. Condit, Sr.

The LPA Group Incorporated
A Unit of Michael Baker Corporation
September 28, 2011

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: CSBRG-0007-00(021) Forsyth Hall **OFFICE:** Engineering Services
P.I. No.: 0007021
SR 53 @ Chestatee River Bridge Replacement **DATE:** March 16, 2012

FROM: Lisa L. Myers, State Project Review Engineer

TO: Bobby K. Hilliard, PE, State Program Delivery Engineer
Attn.: Otis Clark

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held December 5-8, 2011. Responses were received on March 8, 2012. 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-1	Shift the centerline of the alignment south y 24 feet closer to the existing bridge	\$853,000	Yes	Shifted centerline will lower wall heights and decrease earthwork. This change will decrease wall length, shorten walls, decrease earthwork and reduce right of way impacts.
A-2	Shorten the eastern termination point; end at Sta. 48+00 in lieu of Sta. 50+00	\$56,000	No	The existing vertical curve (Sta. 44+00 to Sta. 52+00) is substandard. In order to improve this curve to meet standards, the project must be extended to Sta. 52+50.
B-7	Reduce the number of beams in Alternate B from 5 to 4	\$245,000	No	Preliminary design suggests that 5 beams per span are more efficient than the use of 4 beams. Should the design team determine that reducing the number of beams is more cost effective as the final design progresses, the number of beams will be reduced.
B-9	Eliminate bridge deck overhands on Alternate B	\$91,000	No	There is a potential for minimal savings using this alternative, but it requires the screed to be supported directly over a beam and the deck to be patched at the screed supports. This makes it difficult to get a smooth finish. The Construction Office does not recommend this technique due to these constructability issues. Many contractors in Georgia are not familiar with this method of construction. This could discourage contractors from bidding and reduce the competitiveness of bids.

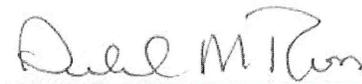
B-10	Increase deck strength from 3500 psi to 4500 psi	Proposed = \$34,000 Revised = \$18,500	Yes, partially	The Bridge Office is utilizing 4,000 psi concrete in LRFD designs and OMR has developed a special provision for this higher strength. The Department has had issues getting higher strength from ready-mix concrete therefore it is not recommended to utilize higher than 4,000 psi. Although this project is designed using the AASHTO Standard code, not LRFD, there is a potential to reduce the deck cost by using a higher concrete strength. In addition, higher concrete strengths will be beneficial in meeting deck stress requirements in the design of the post-tensioned composite beam section.
B-13	Shorten the drilled caissons by 20 to 25 feet	Design Suggestion	No	This project is in the concept development/preliminary plan stage. New borings have not been obtained and the BFI is not underway. The foundations will be determined at the appropriate point in the project development.
CM-2	Allow a base bid bridge design (Alternate B) with allowable design bid options by the contractor	\$245,000	No	As the foundation recommendations develop the design team may provide alternate foundation types in the plans, but it is premature to make a decision on foundation at this point in the project. Cost savings should be "\$0" for this VE Alternative.
CM-2.1	Develop a base bid bridge design (Alternate B) with two or three bid options	\$98,000	No	As the foundation recommendations develop the design team may provide alternate foundation types in the plans, but it is premature to make a decision on foundation at this point in the project. Cost savings should be "\$0" for this VE Alternative.
P-4	Lower the profile on the eastern end of the alignment from Sta. 32+26 to Sta. 48+30	Proposed = \$122,000 Actual = \$45,000	Yes, partially	The roadway profile may be partially lowered from existing grades of -0.5382% and 2.2222% to -0.74265 and 2.4800%. This change will shorten height and decrease total length of retaining walls, decrease fill, and improve staging. The VE proposed grades of -1% and 2.94% were unachievable while maintaining the sufficiency of the following vertical curve.

W-1	Lengthen the bridge by 622 feet and replace MSE walls/embankment with bridge structure	Cost increase (\$876,000)	No	The design team agrees that impacts to lake volume and environmental impacts are a major issue in the planning and construction of this project. While limiting these impacts is a priority, the ability to obtain permitting for the projects with the original concept is not in doubt. Though there may be some cost risk associated with the volatility of mitigation costs, it is small relative to the cost of additional bridge. The cost associated with lengthening the bridge to this extent is not justified. Additionally, if VE alternatives A-1 and P-4 are implemented, there would be a reduced benefit and greater net cost to W-1. However, the Bridge Office does not recommend constructing MSE walls which may be inundated by the lake, as water in the back fill produces the greatest amount of risk to this type of retaining wall. Therefore, it will be necessary to extend the bridge to eliminate any walls below elevation 1071. The design team will determine the appropriate length of the bridge in conjunction with the implementation of other alternatives. An extension of between 100 and 150 feet will likely be adequate.
W-1.1	Lengthen the bridge by 522 feet and replace MSE walls/embankment with bridge structure	Cost increase (\$665,000)	No	See response to W-1.
W-1.2	Lengthen the bridge by 147 feet and replace MSE walls/embankment with bridge structure	Cost increase (\$273,000)	Yes	See response to W-1.

W-2	Use more sloped fill (2:1) in lieu of MSE walls	\$586,000	No	As stated in the VE Study, this alternate would significantly increase the amount of fill in the lake and environmental impacts over the original concept. This increase would complicate the environmental permitting and delay the permitting process. The amount of additional lake volume mitigation required under this alternate may require mitigation off site, further complicating the environmental process. The extent of the required fill slopes may also increase the required ROW to construct the project, reducing the cost savings. In addition, the implementation of A-1 and P-4 will allow for some portions of MSE walls to be eliminated, thereby reducing the savings of W-2.
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The Office of Engineering Services concurs with the Project Manager's responses.

Approved:



Gerald M. Ross, PE, Chief Engineer

Date:

3/19/2012

LLM

Attachments

c: Russell McMurry
Bobby Hilliard/Stanley Hill/Otis Clark
Paul Liles/Ben Rabun/Bill Duvall
Bobby Dollar
Johnny Emmett
Ken Werho
Lisa Myers
Matt Sanders

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE CSBRG-0007-00(021), Forsyth/Hall Counties
SR 53 over Chestatee River (Lake Lanier) Bridge Replacement
P.I. No. 0007021

OFFICE Program Delivery

FROM  Bobby Hilliard, P.E., State Program Delivery Engineer

DATE March 8, 2012

TO Lisa Myers, Acting State Project Review Engineer

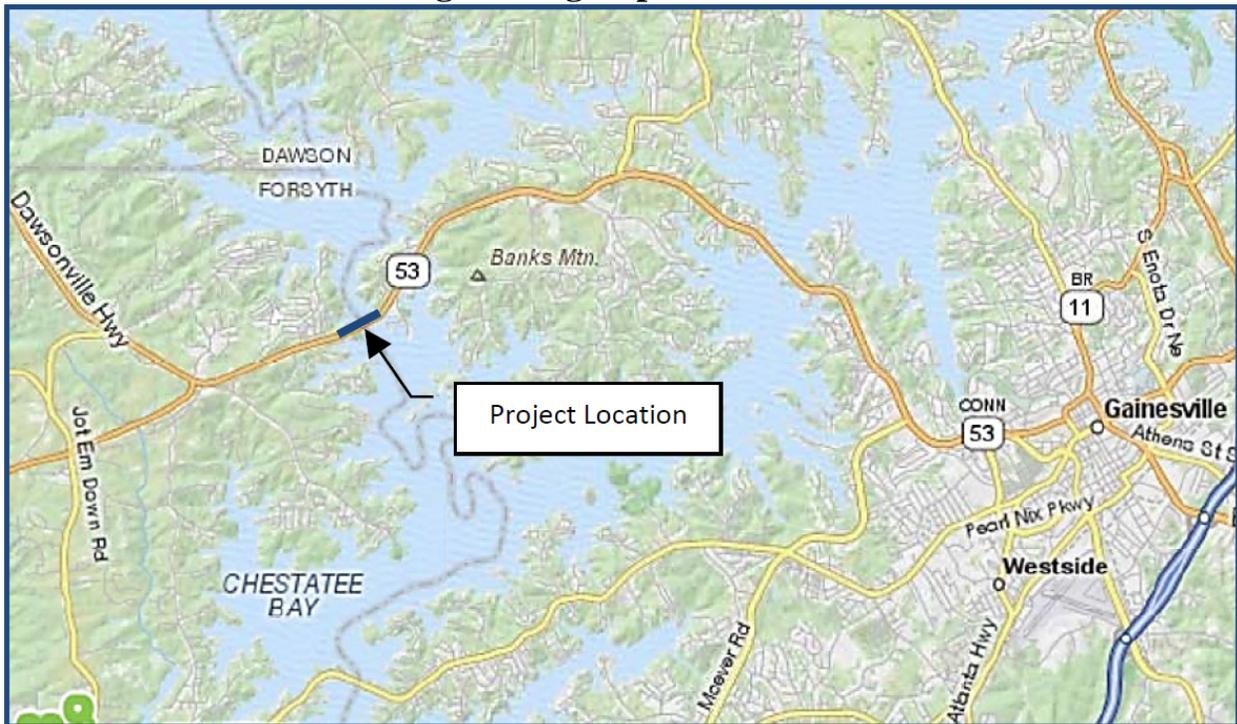
SUBJECT Response to Value Engineering Study Alternatives

Attached are the responses for the Value Engineering Study. This office concurs with the responses.

If you have any questions or require further information please call Otis Clark at (404) 631-1577.

BKH: SH: OC

**GEORGIA DEPARTMENT OF TRANSPORTATION
CSBRG-0007-00(021) P.I. No. 0007021
SR 53 over Chestatee River (Lake Lanier) Bridge Replacement
Forsyth and Hall Counties
Value Engineering Report --- RESPONSE**



GEORGIA DEPT. OF TRANSPORTATION
Project CSBRG-0007-00(021) Forsyth and Hall Counties PI 0007021
S.R. 53 over Chestatee River (Lake Lanier)

RESPONSE TO THE VALUE ENGINEERING (VE) REPORT Dated: January 2012

This response to the Value Engineering Study/Report prepared by Value Management Strategies for the above project is the LPA Design Team analysis of the recommendations offered in the VE study/report that, if implemented, would presumably reduce the overall project costs and/or provide the best value for the Department in developing a project that would achieve the need and purpose. Out of 23 original alternatives/recommendations considered by the VE team, 13 were selected for implementation. The response provided herein will focus only on the 13 alternatives/recommendations suggested by the VE Team for implementation and will address each conceptual alternative. The format and order of the responses follow the presentation in the VE Report.

VE Alternatives/recommendations for implementation:

A-1: Shift the centerline of the alignment south by 24 feet, closer to the existing bridge.

Proposed Cost savings: \$853,000

Response: WILL IMPLEMENT

Shifted centerline will lower wall heights and decrease earthwork. This change will decrease wall length, shorten walls, decrease earthwork and reduce right of way impacts.

A-2: Shorten the eastern termination point, end at STA 48+00 in lieu of STA 50+00

Proposed Cost savings: \$56,000

Response: WILL NOT IMPLEMENT

The existing vertical curve (approximately STA 44+00 to STA 52+00) is substandard. In order to improve this curve to meet standards, the project must extend to STA 52+50.

BR-7: Reduce the number of beams in Alternate B from 5 to 4

Proposed Cost Savings: \$254,000

Response: WILL NOT IMPLEMENT

Preliminary design suggests that 5 beams per span are more efficient than the use of 4 beams. Should the design team determine that reducing the number of beams is more cost effective as

they move to final design then they will reduce. This is common practice with the design of any bridge.

BR-9: Eliminate bridge deck overhangs on Alternative B

Proposed Cost Savings: \$91,000

*Response: **WILL NOT IMPLEMENT***

There is a potential for minimal savings using this alternative but requires the screed to be supported directly over a beam, the deck must be patched at the screed supports and is difficult to get a good finish. The Construction Office does not recommend this technique due to these constructability issues. Also, this is a construction method that many contractors in Georgia are not familiar with. This could discourage contractors from bidding and/or reduce competitiveness of bids.

BR-10: Increase deck concrete strength from 3,500psi to 4,500psi.

Proposed Cost Savings: \$34,000

Revised Cost Savings: \$18,500

*Response: **WILL IMPLEMENT (PARTIALLY)***

The Bridge Office is utilizing 4,000 psi concrete in LRFD designs and the Office of Materials and Research has developed a special provision for this higher strength. The Department has had issues getting higher strength from ready-mix concrete and therefore it is not recommended to utilize higher than 4,000 psi. Although this project is to be designed using the AASHTO Standard code, not LRFD, there is a potential to reduce the deck cost by using a higher concrete strength. In addition, higher concrete strengths will be beneficial in meeting deck stress requirements in the design of the post-tensioned composite beam section.

BR-13: Shorten the drilled caissons.

Proposed Cost Savings: NA (design suggestion)

*Response: **WILL NOT IMPLEMENT***

This project is in the concept development – preliminary plan stage. New borings have not been obtained and the Bridge Foundation Investigation is not underway. The foundations will be determined at the appropriate point in the project development.

CM-2.0: Allow a base bid bridge design with allowable design bid options by the contractor.

Proposed Cost savings: \$245,000

Response: WILL NOT IMPLEMENT

As the foundation recommendations develop the design team may provide alternate foundation types in the plans, but it is premature to make a decision on foundations at this point in the project. Cost savings should be "\$0" for this VE Alternative

CM-2.1: Develop a base bid bridge design with 2 to 3 foundation bid options.

Proposed Cost savings: \$98,000

Response: WILL NOT IMPLEMENT

As the foundation recommendations develop the design team may provide alternate foundation types in the plans, but it is premature to make a decision on foundations at this point in the project. Cost savings should be "\$0" for this VE Alternative.

P-4: Lower the profile on the eastern end of the alignment from STA 32+26.76 to STA 48+30

Proposed Cost savings: \$122,000

Revised Cost Savings: \$45,000

Response: WILL IMPLEMENT (PARTIALLY)

The roadway profile may be partially lowered from existing grades of (-0.5382% and 2.2222%) to (-0.7426% and 2.4800%). This change will shorten height and decrease total length of retaining walls, decrease fill, and improve staging. The VE proposed grades of -1.000% and 2.94% were unachievable while maintaining the sufficiency of the following vertical curve.

W-1.0: Lengthen the bridge by 622 feet and replace MSE walls/embankment with structure.

Proposed Cost savings: (\$876,000)

Response: WILL NOT IMPLEMENT

The Design Team agrees that impacts to lake volume and environmental impacts are a major issue in the planning and construction of this project. While limiting these impacts is a priority, the ability to obtain permitting for the project (with the original concept) is not in doubt. Though there may be some cost risk associated with the volatility of mitigation costs, it is small relative to the cost of additional bridge. The cost associated with lengthening the bridge to this extent is

not justified. Additionally, if VE alternates A-1 and P-4 are implemented, there would be a reduced benefit and greater net cost to W-1. However, the Bridge Office does not recommend constructing MSE walls which may be inundated by the lake, as water in the backfill produces the greatest amount of risk to this type of retaining wall. Therefore, it will be necessary to extend the bridge to eliminate any walls below elevation 1071. The design team will determine the appropriate length of the bridge in conjunction with the implementation of other VE alternates. An extension of between 100 and 150 feet will likely be adequate.

W-1.1: Lengthen the bridge by 522 feet and replace MSE walls/embankment with structure.

Proposed Cost savings: (\$665,000)

*Response: **WILL NOT IMPLEMENT***

See response to W-1.0

W-1.2: Lengthen the bridge by 147 feet and replace MSE walls/embankment with structure.

Proposed Cost savings: (\$273,000)

*Response: **WILL IMPLEMENT***

See response to W-1.0

W-2: Use more sloped fill (2:1) in lieu of MSE walls.

Proposed Cost savings: \$586,000

*Response: **WILL NOT IMPLEMENT***

As stated in the VE Study, this alternate would significantly increase the amount of fill in the lake and environmental impacts over the original concept. This increase would complicate the environmental permitting and delay the permitting process. The amount of additional lake volume mitigation required under this alternate may require mitigation off site, further complicating the environmental process. The extent of the required fill slopes may also increase the required right of way to construct the project, reducing the cost savings. Therefore the Design Team recommends that this alternate not be implemented. In addition, the implementation of alternates A-1 and P-4 will allow for some portions of MSE wall to be eliminated. If these alternates are implemented, the MSE limits will be optimized, reducing the cost savings of alternate W-2.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE CSBRG-0007-00(021) FORSYTH-HALL COUNTIES OFFICE Atlanta, GA
SR 53 / Chestatee River (Lake Lanier) DATE February 13, 2012
P.I. No. 0007021

FROM Benjamin F. Rabun, III, P.E., State Bridge Engineer

TO Bobby Hilliard, P.E., State Program Delivery Engineer
Attn: Otis Clark

SUBJECT BRIDGE DESIGN VALUE ENGINEERING RESPONSE

The Value Engineering Study for the above referenced project dated December 20, 2011 contained 9 VE Alternatives and one Design Suggestion requiring responses from the Bridge Office: VE Alternatives B-7.0, B-9.0, B-10.0, CM-2.0, CM-2.1, W-1.0, W-1.1, W-1.2, and W-2.0 and Design Suggestion B-13. The Bridge Office proposes the following in response.

VE Alternative B-7.0 – “Reduce the number of beams in Alternate B from 5 to 4”

Recommendation: **Do Not Implement.** Preliminary design suggests that 5 beams per span are more efficient than the use of 4 beams. Should the design team determine that reducing the number of beams is more cost effective as they move to final design then they will reduce. This is common practice with the design of any bridge.

VE Alternative B-9.0 – “Eliminate the bridge deck overhang on Alternate B”

Recommendation: **Do No Implement.** There is a potential for minimal savings using this alternative but requires the screed to be supported directly over a beam, the deck must be patched at the screed supports and is difficult to get a good finish. The Construction Office does not recommend this technique due to these constructability issues.

VE Alternative B-10.0 – “Increase the deck concrete strength from 3,500 psi to 4,500 psi”

Recommendation: **Implement with Modification.** The Bridge Office is utilizing 4,000 psi concrete in LRFD designs and the Office of Materials and Research has developed a special provision for this higher strength. The Department has had issues getting higher strength from ready-mix concrete and therefore it is not recommended to utilize higher than 4,000 psi.

Design Suggestion B-13 – “Shorten the drilled caissons by 20 to 25 feet”

Recommendation: **Do Not Implement.** This project is in the concept development – preliminary plan stage, new borings have not been obtained and the Bridge Foundation Investigation is not underway. The foundations will be determined at the appropriate point in the project development.

VE Alternative CM-2.0 – “Allow a base bid bridge design (Alternate B) with allowable design bid options by the contractor”

Recommendation: **Do Not Implement.** As the foundation recommendations develop the design team may provide alternate foundation types in the plans but it is premature to make a decision on foundations at this point in the project. Cost savings should be “0” for this VE Alternative.

VE Alternative CM-2.1 – “Develop a base bid bridge design (Alternate B) with 2 -3 specific foundation bid options”

Recommendation: **Do Not Implement.** As the foundation recommendations develop the design team may provide alternate foundation types in the plans but it is premature to make a decision on foundations at this point in the project. Cost savings should be “0” for this VE Alternative.

VE Alternative W-1.0 – “Lengthen the bridge by 622 feet and replace MSE walls/embankment with structure”

Recommendation: **Implement with Modification.** The Bridge Office does not recommend constructing MSE walls which may be inundated by the lake. Water in the backfill produces the greatest amount of risk to this type of retaining wall. The design team needs to determine the appropriate length of bridge, profile and alignment to minimize this risk. This may require the bridge to be between 522 to 622 feet of additional length.

VE Alternative W-1.1 – “Lengthen the bridge by 522 feet and replace MSE walls/embankment with structure”

Recommendation: **Do not Implement.** See response to W-1.0.

VE Alternative W-1.2 – “Lengthen the bridge by 147 feet and replace MSE walls/embankment with structure”

Recommendation: **Do not Implement.** See response to W-1.0.

VE Alternative W-2.0 – “Use more sloped fill (2:1) in lieu of MSE walls”

Recommendation: **Do not Implement.** The project footprint depends greatly on the impacts to Lake Lanier. Certainly sloped fills are more cost effective however the project may not be constructible without constructing some walls.

If you have any questions and/or comments, please contact Bill DuVall of the Bridge Design Office at (404) 631-1883 or at email address bduvall@dot.ga.gov.

BFR:WMD

cc: Bill DuVall, Bridge Design

PRECONSTRUCTION STATUS REPORT FOR PI:0007021

PROJ ID: 0007021
COUNTY: Forsyth, Hall
LENGTH (MI): 0.40
PROJ NO: CSBRG-0007-00(021)
PROJ MGR: Clark, Cns
AOHD Initials: SSH
OFFICE: Program Delivery
CONSULTANT: Consultant Design (DOT contract)
SPONSOR: GDOT
DESIGN FIRM: The LPA Group Incorporated

SR S3 @ CHESTATEE RIVER
MPO: Atlanta TMA, Gainesville
TIP #: FT-310
MODEL YR: 2016
TYPE WORK: Bridges
CONCEPT: Replacement
PROG TYPE: Prov. for ITS: N
BOND PROJ.:

MGMT LET DATE: 09/15/2014
MGMT ROW DATE: 05/15/2013
BASELINE LET DATE: 09/17/2014
SCHEDULED LET DATE: 10/31/2014
WHO LETS?: GDOT Let
LET WITH:

PRIORITY CODE:
DOT DIST: 1
CONG. DIST: 9
BIKE: N
MEASURE:
NEEDS SCORE: 6
BRIDGE SUFF:

BASE START	BASE FINISH	LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	% ACTUAL FINISH	PROGRAMMED FUNDS				Date Auth		
								Activity	Approved	Proposed	Cost		Fund	Status
7/25/2011	9/19/2011	7/25/2011	4/5/2012	Concept Development	9/24/2010	8/5/2011	63	PE	2007	2007	1,861,750.88	L1C0	AUTHORIZED	7/25/2006
8/8/2011	8/8/2011	8/8/2011	4/5/2012	Concept Meeting	11/2/2011	11/2/2011	100	ROW	2013	2014	1,082,432.16	L1C0	PRECAST	
8/9/2011	9/19/2011	9/19/2011	4/5/2012	PM Submit Concept Report	11/3/2011	11/3/2011	15	UTL	2015	2015	108,243.21	L1C0	PRECAST	
9/19/2011	9/19/2011	4/5/2012	4/20/2012	Concept Report Review and Comments	8/11/2011	8/11/2011	0	CST	2015	2015	22,081,616.06	L1C0	PRECAST	
9/21/2011	2/21/2012	4/5/2012	4/20/2012	Management Concept Approval Complete	10/20/2011	10/20/2011	83							
3/7/2012	3/7/2012	3/7/2012	4/20/2012	Value Engineering Study	7/29/2011	7/29/2011	50							
9/20/2011	6/11/2012	3/7/2012	4/5/2012	Public Information Open House Held	1/31/2011	1/31/2011	100							
3/8/2012	1/9/2013	4/23/2012	4/20/2012	Environmental Approval			0							
6/14/2012	12/27/2012	7/30/2012	2/22/2013	Field Surveys/SDE			0							
9/20/2011	1/30/2012	4/6/2012	2/11/2013	Preliminary Plans			0							
9/20/2011	3/6/2014	11/5/2013	8/16/2012	Preliminary Bridge Design			0							
2/7/2013	2/7/2013	3/25/2013	4/21/2014	Underground Storage Tanks			0							
2/8/2013	3/7/2013	3/25/2013	3/25/2013	404 Permit Obtainment			0							
3/8/2013	4/4/2013	4/23/2013	4/22/2013	PPR Inspection			0							
3/18/2013	3/18/2013	5/1/2013	5/20/2013	R/W Plans Preparation			0							
5/3/2013	5/30/2013	6/18/2013	5/1/2013	R/W Plans Final Approval			0							
9/6/2013	9/19/2013	10/22/2013	7/15/2013	L & D Approval			0							
12/28/2012	7/16/2013	2/12/2013	11/4/2013	R/W Authorization			0							
3/19/2013	1/22/2014	5/2/2013	8/29/2013	Stake R/W			0							
7/17/2013	1/14/2014	8/30/2013	3/7/2014	Bridge Foundation Investigation			0							
2/20/2014	2/20/2014	4/7/2014	2/27/2014	Final Bridge Plans Preparation			0							
2/28/2014	3/13/2014	4/15/2014	4/7/2014	Final Bridge Plans Preparation			0							
			4/28/2014	Submit FPR Responses (OES)			0							

Activity	Approved	Proposed	Cost Estimate Amount	Date	Activity	Cost	Fund	STIP AMOUNTS	
								Amount	Date
PE	\$1,861,750.88		\$1,861,750.88	2/4/2010	PE	0.00	L1C0		
ROW	\$1,000,000.00		\$1,000,000.00	7/19/2010	ROW	1,061,208.00	L1C0		
UTL	\$100,000.00		\$100,000.00	2/4/2010	UTL	108,243.21	L1C0		
CST	\$20,000,000.00		\$20,000,000.00	2/4/2010	CST	22,081,616.06	L1C0		

District Comments
 Maintenance working on repair plans now, but will scale back repairs in anticipation of replacement E priority 298. Need to get selected consultant under contract and let in FY15. High priority (E/C 1-21-10). PCRF submitted requesting RW fy to move to 2013 with construction to remain in fy 2014.

PreI. Parcel CT: 6
Under Review:
Released:

Total Parcel in ROW System:
Options - Pending:
Condemnations- Pend:

Cond. Filed:
Relocations:
Acquired:

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

DEEDS CT:

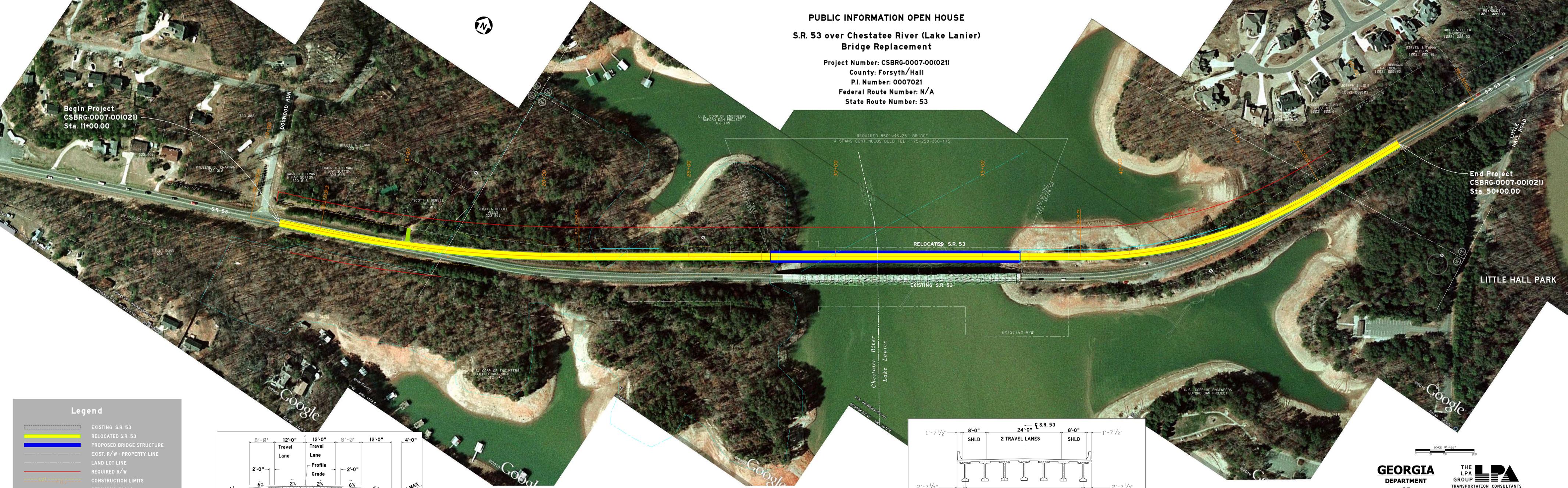
PUBLIC INFORMATION OPEN HOUSE

**S.R. 53 over Chestatee River (Lake Lanier)
Bridge Replacement**

Project Number: CSBRG-0007-00(021)
County: Forsyth/Hall
P.I. Number: 0007021
Federal Route Number: N/A
State Route Number: 53

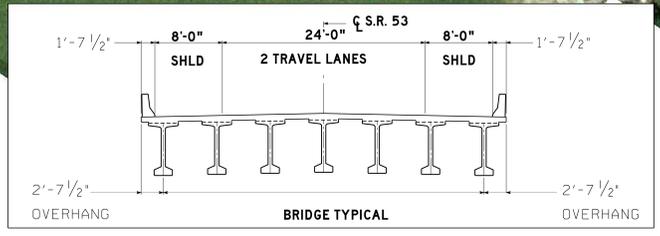
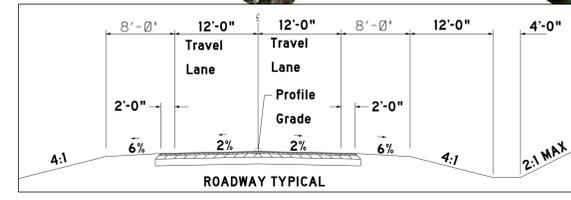
Begin Project
CSBRG-0007-00(021)
Sta. 11+00.00

End Project
CSBRG-0007-00(021)
Sta. 50+00.00



Legend

- EXISTING S.R. 53
- RELOCATED S.R. 53
- PROPOSED BRIDGE STRUCTURE
- EXIST. R/W - PROPERTY LINE
- LAND LOT LINE
- REQUIRED R/W
- CONSTRUCTION LIMITS
- RETAINING WALLS



GEORGIA
DEPARTMENT
OF
TRANSPORTATION

THE LPA GROUP
TRANSPORTATION CONSULTANTS
A UNIT OF MICHAEL BAKER CORPORATION
3595 ENGINEERING DRIVE
NORCROSS, GEORGIA 30092
(770) 263-9118

December 13, 2011