

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** NHS-0000-00(691) Candler  
P.I. No. 0000691  
I-16 Safety Rest Area

**OFFICE:** Engineering Services

**DATE:** May 15, 2006

**FROM:** Brian K. Summers, PE, Project Review Engineer *REW*

**TO:** Brent Story, PE, State Road Design Engineer

**SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY  
ALTERNATIVES**

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
2	Reduce span of proposed bridges to accommodate two lanes only	\$659,511	No	Since I-16 is a Hurricane Evacuation Route, it is anticipated that this road may be widened prior to future traffic needs in order to facilitate emergency evacuations.
3	Provide two Rest Area buildings with the median	\$8,747,844	No	Not consistent with Concept Report. There would also be additional future operating and maintenance costs with two buildings rather than one. Would have left hand exits to emergency parking area.
4	Provide two Rest Area buildings outside the median	\$7,706,244	No	Not consistent with Concept Report. There would also be additional future operating and maintenance costs with two buildings rather than one. Additional right of way would be required.

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**Implementation of Value Engineering Study Alternatives**  
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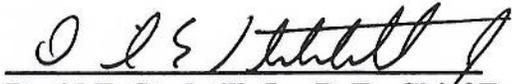
ALT #	Description	Potential Savings/LCC	Implement	Comments
5	Use Design Alternate 4	\$2,241,709	No	Design Alternate 4 called for raising the grade on I-16 for almost two miles and constructing the four mainline bridges over the Rest Area ramps. This would require over 2000' of Retaining Walls and would create less visibility for the traveling public to see the Rest Area site.
6	Use Design Alternate 4 with only one entrance/exit per direction of travel to the Rest Area and two bridges	\$2,304,463	No	See comments under No. 5. Additionally, having only one entrance/exit ramp in each direction introduces the possibility of wrong way movements and does not meet driver expectations.
8	Balance the cut and fill on site	Design Suggestion	Yes	This will be done.
9	Construct Design Alternate 1	\$17,776,459	No	Design Alternate 1 called for left-hand entrance and exit ramps at the Rest Area. This does not meet driver expectations and results in greater potential to confuse the driver.
12	Use a septic tank sewer system	\$544,582	Yes	This should be done.
18A	Develop one Rest Area at the I-16/S.R. 57 Interchange	\$17,941,259	No	Introduces Rest Area traffic with normal local traffic. Also results in two merge points being relatively close together.
18B	Develop two Rest Areas at the I-16/S.R. 57 Interchange	\$15,400,259	No	Introduces Rest Area traffic with normal local traffic. Also results in two merge points being relatively close together.
25/26	Reduce the number of plumbing fixtures and size of the restroom building	\$507,351	No	Doesn't meet the guidelines specified in the AASHTO Guide for the Development of Rest Areas which allows for one restroom section to be closed for routine cleaning and maintenance while another section remains open.

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ALT #	Description	Potential Savings/LCC	Implement	Comments
27	Use locally available building materials	Design Suggestion	Yes	This will be done.
29	Use porous pavement for the emergency parking lot	-\$455,192 (cost increase)	No	Results in a cost increase. The emergency parking lot will only be used during hurricane evacuations.
31	Reduce the building pad elevation/fill requirement	Design Suggestion	Yes	This will be done.

A meeting was held on May 12, 2006 to discuss the above recommendations. Floyd Moore of FHWA, Clay Bastian of Road Design, and Brian Summers and Ron Wishon of Engineering Services were in attendance.

The results above reflect the consensus of those in attendance and those who provided input.

Approved:  Date: 5/15/06  
 David E. Studstill, Jr., P. E., Chief Engineer

Approved:  Date: 6/2/06  
 For: Robert Callan, P. E., FHWA Division Administrator

BKS/REW

Attachments

- c: Gus Shanine, Floyd Moore, FHWA
- Brad Saxon
- Will Murphy
- C.R. Jackson
- Clay Bastian
- Steve Gaston
- Nabil Raad
- Lisa Myers

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA



INTERDEPARTMENT CORRESPONDENCE

FILE NHS-0000-00 (691) Candler County  
PI No. 0000691  
I-16 Median Rest Area  
OFFICE Road Design  
DATE April 25, 2006

FROM *Brent A. Story*  
Brent Story, P.E., State Road and Airport Design Engineer

TO Brian Summer P.E., Project Review Engineer  
Attention: Lisa Myers

SUBJECT VALUE ENGINEERING STUDY - FINAL REPORT RESPONSE

Below are the responses to the Value Engineering Study conducted on March 20-22, 2006, for the above reference project. Each comment was studied and addressed by both the Department's Project Manager and the Consultant's Project Manager:

STRUCTURAL BRIDGES:

*Value Engineering Alternative No. 2 - Reduce Span of proposed bridges to accommodate two lanes only.*

COMMENTS: The proposed bridges are to accommodate a future eastbound and westbound lane. Due to the design, geometrics and staging to add an additional lane in the future, it is more cost effective to construct the bridge and approaches for three lanes in each direction at the time of the initial construction. The proposed traffic does not support the additional lane, I-16 is a major hurricane evacuation route and may be widened to accommodate a future lane sooner than the traffic warrants.

The concept for the proposed bridges to accommodate the future lane was suggested in a previous meeting with FHWA.

(The implementation of this alternative is not recommended).

ROADWAY/SITE:

*Value Engineering Alternative No. 3 - Provide two rest area building within the median.*

COMMENTS: The proposed area within the median is limited due to the existing lake and the eastbound and westbound lanes. This area will not allow the redesign of the mainline to meet the minimum speed design and have a remainder area large enough to accommodate two rest area buildings and overflow parking to for costal evacuation. Additional right of way will be required. The area to the north is limited due to a parallel SR 46.

(The implementation of this design suggestion is not recommended).

*Value Engineering Alternative No. 4 - Provide two rest area building outside the median.*

COMMENTS: The area outside the median in the vicinity proposed location is limited and not large enough to construct adequate size rest areas due to the existing parallel SR 46 to the north and County Road 162 to the south. Each site will require approximately 15 acres not including the area for the overflow parking.

(The implementation of this design suggestion is not recommended).

*Value Engineering Alternative No. 5 - Use Design Alternate 4.*

COMMENTS: The reconstruction of I-16 at a higher elevation than the rest area will require over 2000 linear feet of retaining walls and will create less site visibility for the motoring public. This alternate is less preferred due to limited motorist site visibility.

(The implementation of this design suggestion is not recommended).

*Value Engineering Alternative No.6 - Use Design Alternate 4 with only one entrance/exit per direction of travel to the rest area and two bridges.*

COMMENTS: This alternative as shown in the sketch will allow the motorists to interact with the motorists in the other direction on the interstate. This will create the potential for a wrong way movement. This alternate will also will require a turn-a-round for trucks which can not be constructed at this site. The one entrance/exit ramp per direction of travel creates conflict points at the ramp terminus. This type design does not meet the driver expectations for rest areas. The raising of the mainline will create less site visibility.

(The implementation of this alternative is not recommended).

*Value Engineering Alternative No. 8 - Balance the cut and fill on the site*

COMMENTS: This recommendation should be carried forth. The plans will make every effort to balance the earthwork during the development of the construction plans while focusing on the impacts on the wetlands and the aesthetics of the site.

(The implementation of this alternative is recommended.).

*Value Engineering Alternative No. 9 - Construct Design Alternate 1.*

COMMENTS: Alternate one proposes left-hand entrance and exit ramps connecting I-16 to the site. Because drivers expect right-hand access to and from controlled-access highways, the left-hand entrance and exit represents a much greater potential to confuse the driver. This confusion creates a higher incidence of rear end accidents with slower moving trucks and RV's (using right-side rear view mirrors) that weave into the left or high-speed lanes of I-16.

(The implementation of this alternative is not supported by FHWA).

*Value Engineering Alternative No. 12 - Use a septic tank sewer system.*

COMMENTS: This recommendation should be carried forth. We will review several alternates to include a septic tank sewer system on site.

(The implementation of this alternative is recommended.).

*Value Engineering Alternative No. 18A - Construct one rest area at the I-16/SR 57 interchange.*

COMMENTS: There are many variables used to locate new rest areas as outlined in the AASHTO Guide for Development of Rest Areas on Major Arterials and Freeways. Several are unique site qualities, including scenic view, natural features, geometrics of highway access and right of way considerations. The construction of a rest area as proposed in the median includes these qualities. The special site opportunities at this location will provide opportunities for travelers to experience and interact with the natural environment as pedestrians. The selection of a rest area site at confined areas (I-16/SR 57 interchange) should be avoided if possible. It is important the state maintains a positive public image and gain cooperation from the landowners for the development of the rest area. The land in the area at the interchange has some development and the remaining properties are likely to be developed. The acquisition of right-of-way at the interchange will have opposition and will require long delays for negotiation.

(The implementation of this alternative is not recommended).

***Value Engineering Alternative No. 18B - Construct two rest areas at the I-16/SR 57 interchange.***

COMMENTS: There are many variables used to locate new rest areas as outlined in the AASHTO Guide for Development of Rest Areas on Major Arterials and Freeways. Several are unique site qualities, including scenic view, natural features, geometrics of highway access and right of way considerations. The construction of a rest area as proposed in the median includes these qualities. The special site opportunities at this location will provide opportunities for travelers to experience and interact with the natural environment as pedestrians. The selection of a rest area site at confined areas (I-16/SR 57 interchange) should be avoided if possible. It is important the state maintains a positive public image and gain cooperation from the landowners for the development of the rest area. The land in the area at the interchange has some development and the remaining properties are likely to be developed. The acquisition of right-of-way at the interchange will have opposition and will require long delays for negotiation.

(The implementation of this alternative is not recommended).

***Value Engineering Alternative No. 25/26 - Reduce the number of plumbing fixtures and size of restroom building.***

COMMENTS: The AASHTO Guide for Development of Rest Areas on Major Arterials and Freeways figure 13 (Rest-area design calculations form) was used to determine the number of plumbing fixtures. The number of plumbing fixtures and proposed size of the restroom building is sized such to close one section during the off peak time of operation during the cleaning and maintenance of the facility. A plumbing fixture reduction to 30 will not meet the guidelines mentioned above. Also this reduced size is not consistent with the other rest areas and welcome centers locations throughout the state.

(The implementation of this alternative is not recommended).

***Value Engineering Alternative No. 27 - Use locally available building materials.***

COMMENTS: This recommendation should be carried forth. The plans will include local available building materials during the development of the construction plans.

***Value Engineering Alternative No. 29- Use porous pavement for the emergency parking lot.***

COMMENTS: The emergency parking lot is anticipated to be used during hurricane evacuation. The use of porous pavement is more costly than the typical section proposed.

(The implementation of this alternative is not recommended).

***Value Engineering Alternative No. 31 - Reduce the building pad elevation/fill requirement.***

COMMENTS: This recommendation will be reviewed further during the preliminary plan phase to adjust the building finished floor elevation during the development of the ramp and mainline profiles.

BAS:CB:ss