

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0222-01(001) Cobb **OFFICE:** Engineering Services
P.I. No.: 752300
I-285@CR 4519/Atlanta Road **DATE:** January 20, 2010

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

TO: Russell R. McMurry, PE, State Roadway Design Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held June 1-4, 2009. Responses were received on January 20, 2010. 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
B2-1	Build Atlanta Road Bridge over I-285 so that it can be expanded later	\$885,602	No	Several bridges along the I-285 corridor in Cobb County have been built to accommodate the 5-5-5-5 future I-285/CD system lane configuration. Although there is an initial cost savings, the implementation of this VE recommendation would create increased costs for the future I-285 expansion and the need for additional MSE walls.
B2-2	Use MSE walls for the CSX bridge and shorten the bridge	\$6,195	No	Due to the change in the preferred alternate, the Ramp C bridge over CSX is no longer part of the design. This recommendation no longer applies.
B2-3	Reduce the median width on the Atlanta Road bridge over I-285 and the approaches by 14 feet	\$561,668	No	This recommendation only applies to the Partial Cloverleaf interchange configuration, which will not be used. This recommendation no longer applies.
B2-6	Build Orchard Road bridge over 10 lanes of I-285 now and allow for an extension later	\$324,339	Yes	This will be done.

B2-7	Use 5 ½ ft wide sidewalks in lieu of 6 ft and 8 ft sidewalks on the bridges	\$228,911	Yes	This will be done.
B2-8	Take the sidewalk off the eastbound side of the Atlanta Road Bridge over I-285 and narrow the bridge	\$196,067	No	Since the preferred alternate has been changed to the more pedestrian friendly urban diamond configuration, the VE Team's concerns associated with pedestrian crossings adjacent to the two lane free-flow ramp are no longer warranted. Due to the highly urban, pedestrian friendly land use along the Atlanta Road corridor, the sidewalk will remain on both sides of the Atlanta Road bridge.
H2-4.1	Make Ramp D a single loop ramp	\$45,069	No	This recommendation only applies to the Partial Cloverleaf interchange configuration, which will not be used. Ramp D has been removed from the proposed design. This recommendation no longer applies.
H2-4.2	Extend the two lane portion of Ramp D	Design Suggestion	No	This recommendation only applies to the Partial Cloverleaf interchange configuration, which will not be used. Ramp D has been removed from the proposed design. This recommendation no longer applies.
H2-5	Use fill between I-285 and the west side of Ramp C in lieu of MSE wall	\$326,195	No	This recommendation only applies to the Partial Cloverleaf interchange configuration, which will not be used. Ramp C has been removed from the proposed design. This recommendation no longer applies.
H2-6	Raise the Atlanta Road Bridge over I-285 to avoid having to lower the Colonial Pipeline	\$1,706,000	Yes	The proposed NB exit ramp will be relocated to match the existing NB exit ramp alignment and profile. Due to the change in preferred alternative, the Atlanta Road grade is no longer controlled by the elevation of Ramp D (removed from the design); therefore, the potential for conflict with the Colonial and Plantation Pipelines is eliminated.

A4-1	Alternative Design 4 – Save Warehouse by retaining drive access at intersection with Atlanta Road./Brownwood Lane	\$3,654,927	Yes	This will be done.
A4-2	Build Atlanta Road Bridge so that it can be lengthened at both ends in the future	\$1,636,808	No	The 5-5-5-5 bridge span configuration will remain in place as noted in the response to VE Alternative B2-1.
A4-3	Retain a portion of the existing northbound exit ramp to Atlanta Road	\$224,580	Yes	This will be done. The operational improvements recommended for Atlanta Road should eliminate concern over queuing traffic accumulating on the shorter exit ramp.

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

Approved:  Date: 11/20/10
Gerald M. Ross, PE, Chief Engineer

Approved:  Date: 2/25/2010
for Rodney Barry, PE, FHWA Division Administrator

REW/LLM
Attachments

- c: R. Wayne Fedora/Mindy Roberson/Latoya Johnson - FHWA
- Ben Buchan
- Paul Liles/Bill Duvall/Bill Ingalsbe/Doug Franks
- Russell McMurry/Darrell Richardson/Butch Welch/Marcela Coll/Aisha Rowland
- Larry Bowman
- Mickey McGee/Sebastian Nesbitt/Dale Ferris
- Nabil Raad
- Lisa Myers
- Matt Sanders



An employee-owned company

RECEIVED
JAN 11 2010
ROADWAY DESIGN

McMurry	_____
Casey	_____
Hasty	_____
McCook	_____
Richardson	<i>Butch</i>
Other	_____
File	_____

January 11, 2010

Ronald E. Wishon, Acting State Project Review Engineer
Georgia Department of Transportation
One Georgia Center
600 West Peachtree Street, N.W.
Atlanta, Georgia 30308

Attention: Lisa Myers

RE: I-285 @ CR 4519/Atlanta Road Interchange
STP00-0222-01(001), Cobb County
P.I. No. 752300
Value Engineering Study Responses

Dear Mr. Wishon:

Reference is made to the recommendations that were contained in the Value Engineering Study Final Report issued June 22, 2009 for the above referenced project. Bear in mind that since the Value Engineering Study was held, the preferred alternate for the I-285/Atlanta Road interchange has changed from the Partial Cloverleaf scheme to the Tight-Urban Diamond configuration. Our responses and recommendations are as follows:

1. Value Engineering Alternative No. B2-1 – Build Atlanta Road Bridge over I-285 as three spans with the capability of being expanded to four spans when I-285 is expanded to 10 lanes in each direction. (Cost savings: \$885,603)

Recommendation

Approval of the VE Alternative No. B2-1 is not recommended.

- *Several bridge projects in this Cobb County/I-285 corridor have been built to accommodate the 5-5-5-5 future I-285/CD system lane configuration. Keeping the span configuration as-is will assure sectional consistency throughout the corridor regardless of what the ultimate I-285 typical section is.*
 - *Despite an initial cost savings, the VE alternative is not recommended for implementation due to the costs associated with the future I-285 expansion and the need for additional permanent MSE walls and the likelihood of maintenance of traffic difficulties.*
2. Value Engineering Alternative No. B2-2 – Use mechanically stabilized earth walls (MSE) for Ramp C Bridge over CSX Railroad and eliminate end spans (Cost savings: \$6,195)

Recommendation

Approval of the VE Alternative No. B2-2 is not recommended.

- *Due to the change in preferred alternate, the Ramp C bridge over CSX is no longer part of the design.*

3. **Value Engineering Alternative No. B2-3** – Reduce the median width on the Atlanta Road bridge over I-285 by 14 feet and the approach roadway on either side of the bridge (Cost savings: \$561,668)

Recommendation

Approval of the VE Alternative No. B2-3 is not recommended.

- *This recommendation applies only to the Partial Cloverleaf interchange configuration, which will not be implemented. The Atlanta Road median width for the Tight Urban Diamond interchange is eight (8) feet.*

4. **Value Engineering Alternative No. B2-6** – Build Orchard Road Bridge over I-285 as two spans with the capability of expanding to four spans when I-285 is expanded to 10 lanes in each direction (Cost savings: \$324,339)

Recommendation

Approval of the VE Alternative No. B2-6 is recommended

- *Despite the fact that all recent bridge projects in this Cobb County/I-285 corridor have been built to accommodate the 5-5-5-5 future I-285/CD system lane configuration, the VE alternative is recommended for implementation given the large initial cost savings. Bear in mind, the costs associated with the future I-285 expansion will be significant due to need for additional permanent MSE walls.*
- *This span configuration is recommended at Orchard Rd and not at Atlanta Road because complications and costs associated with maintenance of traffic are not an issue at Orchard Road. Orchard Road is closed to thru traffic during the construction of this project and would almost certainly be closed if I-285 were to be widened.*

5. **Value Engineering Alternative No. B2-7** – Use 5 ft-6 in. wide sidewalks (both sides) for the Atlanta Road Bridge over I-285 and Orchard Rd over I-285 (Cost savings: \$218,911)

Recommendation

Approval of the VE Alternative No. B2-7 is recommended.

- *Recommend deferring to new GDOT bridge width policy, as stated.*

6. **Value Engineering Alternative No. B2-8** – Remove sidewalk from eastbound side of Atlanta Road Bridge over I-285 (Cost savings: \$196,066)

Recommendation

Approval of the VE Alternative No. B2-8 is not recommended.

- *Do to the highly urban, pedestrian friendly land-use along the Atlanta Road corridor, it is preferred that sidewalk remain on both sides of the Atlanta Road bridge.*
- *Since the preferred alternate has changed to the more pedestrian-friendly urban diamond configuration, the VE team's concerns associated with pedestrian crossings adjacent to the two lane free-flow ramp are no longer warranted.*
- *This alternative does not provide enough of a cost savings to justify the decrease in pedestrian access.*

7. **Value Engineering Alternative No. H2-4.1** – Make Ramp D (loop ramp) a single lane ramp in lieu of a partial two-lane ramp (Cost savings: \$45,070)

Recommendation

Approval of the VE Alternative No. H2-4.1 is not recommended.

- *This recommendation applies only to the Partial Cloverleaf interchange configuration, which will not be implemented. Ramp D has been removed from the proposed design.*

8. **Value Engineering Alternative No. H2-4.2** – Extend two lanes of Ramp D as far as possible (Design Suggestion)

Recommendation

Approval of the VE Alternative No. H2-4.2 is not recommended.

- *This recommendation applies only to the Partial Cloverleaf interchange configuration, which will not be implemented. Ramp D has been removed from the proposed design.*

9. Value Engineering Alternative No. H2-5 – Use fill between I-285 and the west side of Ramp C in lieu of MSE wall (Cost savings: \$326,195)

Recommendation

Approval of the VE Alternative No. H2-5 is not recommended.

- *This alternative represented the intended concept by the designer. The cross-sections did not reflect a recent change to the plans (as shown on the plans by the construction limits).*
- *This recommendation applies only to the Partial Cloverleaf interchange configuration, which will not be implemented. Ramp C has been removed from the proposed design.*

10. Value Engineering Alternative No. H2-6 – Raise the Atlanta Road Bridge over I-285 to avoid having to lower the Colonial Pipeline (Cost savings: \$1,606,000)

Recommendation

Approval of the VE Alternative No. H2-6 is recommended, with stipulations.

- *The proposed NB exit ramp will be relocated to match the existing NB existing ramp alignment & profile. Due to the change in preferred alternatives, the Atlanta Rd grade is no longer controlled by the elevation of Ramp D (removed from the design), and therefore the potential for conflicts with the Colonial and Plantation Pipelines is eliminated.*
- *Existing pipeline elevations based on plans and datum provided by the utility companies. Inverts will need to be field verified.*

Please note: The following three VE alternatives pertain specifically to the Tight Urban Diamond interchange (TUDI) concept (Alternate 4) as it was presented at the time of the VE study.

11. Value Engineering Alternative No. A4-1 – Save the warehouse by providing access at a signalized intersection with Brownwood Lane (Cost savings: \$3,654,926)

Recommendation

Approval of the VE Alternative No. A4-1 is recommended

- *This alternative is recommended as a revision to Alt. 4, in an effort to reduce costs.*

12. Value Engineering Alternative No. A4-2 – Build Atlanta Road Bridge so that it can lengthened at both ends in the future (Cost savings: \$1,636,808)

Recommendation

Approval of the VE Alternative No. A4-2 is not recommended

- *The 5-5-5 bridge span configuration will remain in-place as noted in the response to VE Alternative B2-1.*

13. Value Engineering Alternative No. A4-3 – Retain a portion of the existing I-285 northbound exit ramp to Atlanta Road (Cost savings: \$224,581)

Recommendation

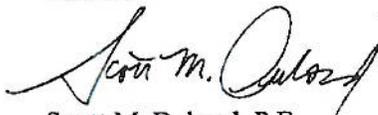
Approval of the VE Alternative No. A4-3 is recommended

- *This alternative is recommended as a revision to Alt. 4, in an effort to reduce costs. The operational improvements recommended for Atlanta Road should eliminate concern over queuing traffic accumulating on the shorter exit ramp.*

If you have any questions or comments, please contact me at (770) 933-0280.

Sincerely,

PBS&J



Scott M. Dubord, P.E.
Project Manager

cc: File (062018)

VE Study Implementation Meeting

February 25, 2010

STP00-0222-01(001) Cobb PI No. 752300

An implementation meeting was held for the Atlanta Road project on February 25, 2010. Mindy Roberson with FHWA, David Jackson with Cobb County, Denny Meier, Ron Morris, and Scott Dubord with PDS&J, Ben Buchan, Russell McMurray, Butch Welch, Marcela Coll, Ron Wishon, Lisa Myers and Matt Sanders with GDOT were in attendance.

The main purpose of the meeting was to clarify the proposed design for each of the alternates and to discuss the proposed lane configuration for future expansion of I-285.

Alternate 2 is a partial diamond/partial cloverleaf interchange with a loop ramp located in the SE quadrant. The construction of the loop ramp would require two displacements. Alternate 2 was the alternate preferred by Cobb County, prior to the VE Study.

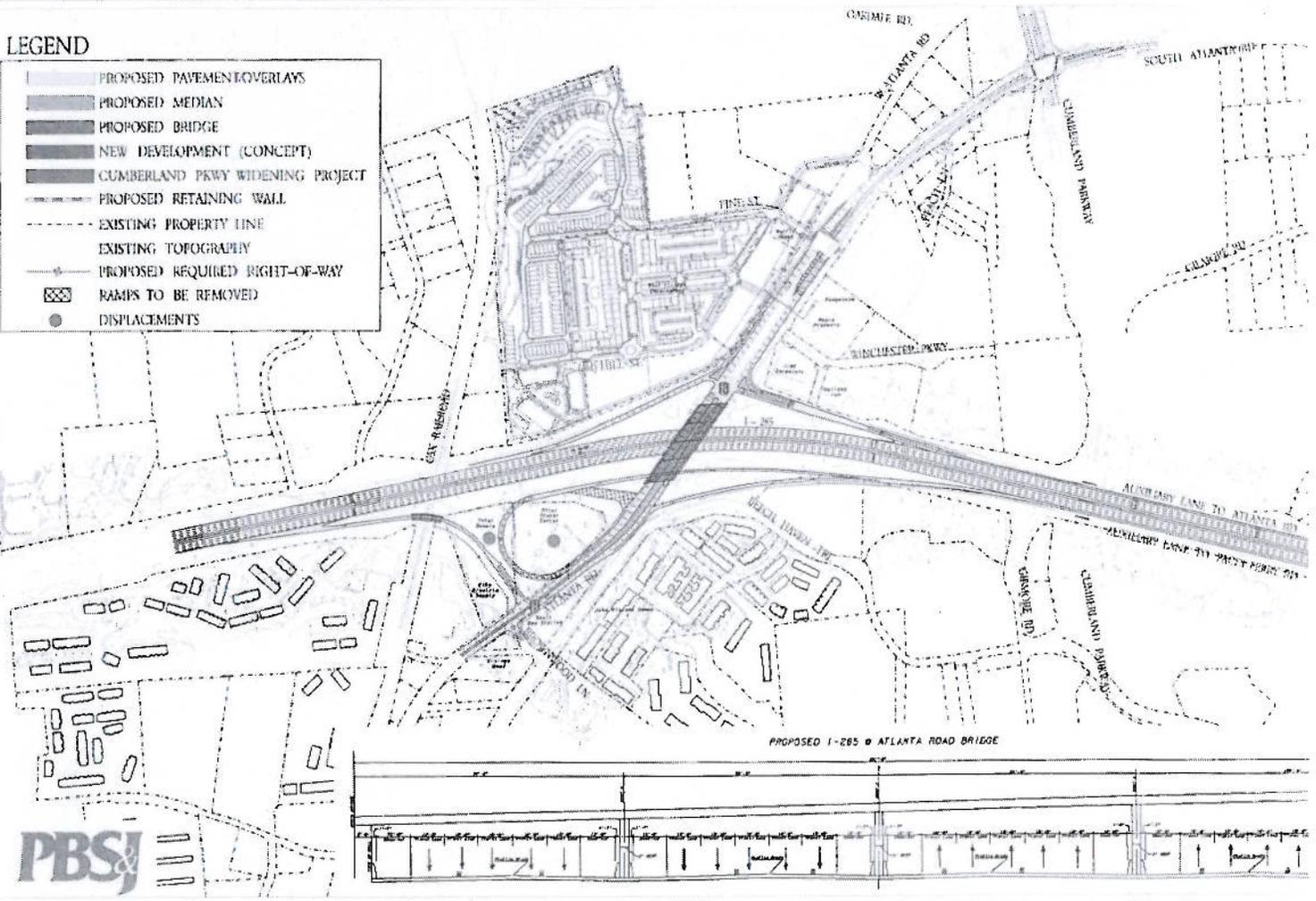
Alternate 4 is a tight urban diamond interchange. No displacements have been identified with this alternate at this time. After the VE Study was held, a decision was made to utilize the TUDI, and Alternate 4 is now the preferred alignment.

Various lane configurations have been considered for I-285. At the time of the VE Study, a managed lane study had not been completed. Other bridges along the I-285 corridor in the vicinity of Atlanta Road have been built to accommodate a 5-5-5-5 lane configuration.

It was reconfirmed by all parties that the Atlanta Road project should be built to accommodate the 5-5-5-5 configuration as well. Using a shorter structure for the Atlanta Road bridge would provide some initial cost savings, but it would make future lengthening difficult. Stage construction would require closures on Atlanta Road that would greatly disrupt traffic. The close proximity of the interstate ramps in the TUDI alternate would make staging difficult and could require closures of the ramps. Any initial cost savings would likely be negated by increase staging costs. The location of the ramps must take into account the 5-5-5-5 configuration so as not to require reconstruction in the future.

LEGEND

-  PROPOSED PAVEMENT OVERLAYS
-  PROPOSED MEDIAN
-  PROPOSED BRIDGE
-  NEW DEVELOPMENT (CONCEPT)
-  CUMBERLAND PKWY WIDENING PROJECT
-  PROPOSED RETAINING WALL
-  EXISTING PROPERTY LINE
-  EXISTING TOPOGRAPHY
-  PROPOSED REQUIRED RIGHT-OF-WAY
-  RAMPS TO BE REMOVED
-  DISPLACEMENTS



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**I-285 @ ATLANTA ROAD
INTERCHANGE RECONSTRUCTION**
ALTERNATE 2 - PREFERRED ALTERNATE

