

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** STP00-0630-00(010), Bryan County **OFFICE:** Engineering Services  
P. I. No.: 532370  
SR 144 Widening **DATE:** March 5, 2009

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

**TO:** Glenn W. Durrence, P.E., District Engineer  
Attention: Dennis Odom, Travis Dent

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

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

ALT No.	Description	Savings PW & LCC	Implement	Comments
<b>ROADWAY Alignment (A)</b>				
A-1	Use right in/right out only on CR 133 (Sterling Road); modify the street access as necessary.	Design Suggestion	No	This is the only entrance to the residential development.
A-3	Reduce the project termination point on the south end from STA. 275+00 to STA. 219+00 and shorten the project by one mile.	\$3,349,249	No	The County is currently building a large sports complex at the end of the project which will include future schools. Large residential development is also planned for the future (4,800 dwelling units).
A-5	Reduce the horizontal radius at STA. 172+00 from 1,900-feet to 650-feet and add about a 6% superelevation to meet 45 mph design requirement.	\$939,654	Yes	This should be done.

Alignment (A) Continued				
A-6	Close the mainline median access point at STA. 159+00. Use right in/right out.	Design Suggestion	Yes	The median opening at STA. 159+00 will remain open, but the nearby opening at Charles Street will be closed instead.
A-7	Close the median at Sterling Road Subdivision (STA. 119+00). Use right in/right out.	Design Suggestion	No	This would eliminate access to the subdivision.
A-8	Close the median access at Rabbit Hill Road (STA. 136+00) and extend the road to CR 97.	Design Suggestion	No	Would create wetland issues and cut-through traffic.
Section (S)				
S-1	Use a single 10-foot wide multi-use path in lieu of two sidewalks.	\$1,138,510	No	The project is on the Bryan County Bicycle and Pedestrian Plan. GDOT State Bicycle and Pedestrian Coordinator recommends bike lanes to remain (see attached e-mail).
S-2	Use 11-foot wide lanes on the inside in lieu of 12-foot wide lanes. Keep 12 foot wide lanes on the outside.	\$539,112	Yes	This should be done.
S-3	Use a 20-foot wide raised median with a 45 mph design speed for the whole alignment in lieu of a mix of 45 and 55 mph.	Design Suggestion	No	The project characteristics change to a more rural setting from the SR 144 Spur to the end of the project.
S-4	Use 18-foot raised grass median in lieu of 20 foot and 24 foot medians.	\$287,679	No	The proposed 20-foot raised grass median ties into an existing 20-foot raised grass median.
S-5	Use concrete paved median and eliminate the mowing over the next 30 years.	\$10,052	No	Maintenance agreement with County to maintain.
S-6	Use a Tensar type geogrid reinforcement and reduce the amount of base material from 5-inches to 2.5-inches.	\$186,114	No	OMR states to not use Geogrid in pavement design as a replacement for any standard paving layer (see attached e-mail).

Section (S) Continued				
S-7	Use 24-inch wide curb and gutter section in lieu of 30-inch wide section.	\$186,114	No	The terrain is flat and the gutter spread is an issue. This recommendation will increase amount of drainage structures and require redesign work.
S-8	Place the sidewalk on one side of the road only. Put the sidewalk on the West side.	\$516,257	No	There are residential developments on both sides of the corridor. There is existing pedestrian traffic between the subdivisions, commercial developments, parks and churches. Future planned development includes a large sports complex and new schools.
S-9	Reduce the width of the shoulders from 12-feet to 10-feet at locations without sidewalks.	\$76,395	No	The 12-foot shoulder width is needed to accommodate the sidewalk and the following utilities: gas, water, sewer, cable, and electric.
S-11	Use two lanes with a raised grass median in lieu of four and retain the existing bridge. Purchase all required ROW, but defer the major improvements.	\$10,693,330	No	Does not address Need and Purpose which states the purpose of this project is to improve the safety and operational conditions of State Route 144 through the addition of travel and turn lanes.
S-12	Use more ditches and less curb and gutter on the East side only; assume a four lane section.	\$1,322,845	No	There are residential areas on both sides of the project and commercial development in the middle. Adjoining section has curb and gutter. City of Richmond Hill and Bryan County in full support of curb and gutter.
BRIDGE (B)				
B-1	Reduce the median on the bridge from 20-feet to 8-feet and taper the median on either side of the bridge.	\$124,675	No	The reduction in median width from 20-feet to 8-feet would require 540-foot tapers on both sides of a short, 120-foot bridge. This short tangent section may present driver expectancy issues. Preliminary bridge design is complete, additional redesign costs would be incurred.

BRIDGE (B) Continued				
B-2	Build a new parallel bridge in lieu of widening the existing bridge. Reduce the area of the bridge.	Proposed= \$470,129 Actual= (-\$10,970)	No	The original cost estimate incorrectly used a full bridge width of 92-feet for the widening instead of the required 47-feet.
B-3	Add a sidewalk on only the west side of the bridge (new construction side). Do not add sidewalk on the existing bridge.	\$15,672	No	There are residential developments on both sides of the road and commercial development taking place in the middle of the project. Future development includes a large sports complex and schools.

A video conference meeting was held on February 24, 2009 to discuss the above recommendations. Brad Saxon, Dennis Odom, Travis Dent with District 5 and Ron Wishon and Douglas Fadool with Engineering Services were in attendance. Additional information was provided by the Project Manager on March 3, 2009.

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

Approved:  Date: 3/6/09  
**Gerald M. Ross, P. E., Chief Engineer**

REW/DMF

Attachments

c. Genetha Rice-Singleton  
Brad Saxon  
Dennis Odom  
Travis Dent  
Paul Liles  
Bill Ingalsbe  
Bill DuVall  
Shaun Williams  
Sheree Smart  
James Magnus  
Will Murphy  
Slade Cole

Anthony Cook  
Ken Werho  
Lisa Myers  
General Files



**4. Value Engineering Alternative A-6: Close the mainline median access point at STA 159+00. Use right in/right out - *Recommended – with modification***

This alternative is **not** recommended as proposed by the VE Team but will be implemented with modifications as proposed by the design team for the following reasons.

- The design team recommends closing the access point at STA 154+09 (Charlies Rd.), which would eliminate the spacing problem between the median openings at 154+09 (Charlies Rd.) and 159+92 (Ogeechee Dr.). If the median open at STA 159+92 (Ogeechee Dr.) is closed, traffic traveling east deeding to access Ogeechee Dr. would have to travel to the access point at STA 172+76 (Strathy Hall Dr.) and make a U-Turn. Due to the limited sight distance in this curve, we think this would be undesirable.

**5. Value Engineering Alternative A-7: Close the median at Sterling Road Subdivision (STA 119+00). Use right in/right out - *Recommended – with modification***

This alternative is **not** recommended as proposed by the VE Team but will be implemented with modification as proposed by the design team for the following reasons.

- The design team recommends leaving the median open but not having a new access point to the Sterling Subdivision. The design team recommends having a right in and right out only with no median opening at the existing entrance to the subdivision at STA 114+40.

**6. Value Engineering Alternative A-8: Close the median access at Rabbit Hill Road (STA 136+00) and extend the road to CR 97 - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- The design team recommends leaving this median access as is. If you extend the road to CR 97, it would have to be realigned with possible wetland impacts.

**7. Value Engineering Alternative S-1: Use a single 10-ft.-wide multi-use path in lieu of two sidewalks - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- Our previous concept consisted of having an urban four-lane section of roadway with a 20' raised median, with sidewalks and a 22.5' shoulder on the right side, which contained an 8-foot asphalt bike lane. The design team, with the City of Richmond Hill and Bryan County's full support, revised the concept to include two 4-foot bike lanes and remove the previously proposed 8-foot asphalt path. Bryan County has adopted a Bicycle and Pedestrian Plan which includes this portion of SR 144. At the time of our concept revision, it was recommended by the State Bicycle & Pedestrian Coordinator to keep the bike lanes in the project (see attached e-mail from Amy Godwin).

**8. Value Engineering Alternative S-2: Use 11 ft.-wide lanes on the inside in lieu of 12 ft.-wide lanes. Keep 12 ft lanes on the outside – *Recommended***

This alternative is recommended for implementation by the Department and the 11-foot wide lanes on the inside will be used in lieu of 12-foot wide lanes.

**9. Value Engineering Alternative S-3: Use a 20 ft.-wide raised median with a 45 mph design speed for the whole alignment in lieu of a mix of 45 and 55 mph - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons

- The design team recommends using the 24' raised median from SR 144 Spur to the end of the project. The characteristics of the corridor change after SR 144 Spur to a more rural setting. There is a large timber track on the right side of the project from the Spur to the end of the project. There will be minimal impacts in this area. In addition, the 24-foot median will provide additional offset to the curb face for the 55 mph design. Therefore, we recommend using the 24' raised median with the 55 mph design speed.

**10. Value Engineering Alternative S-4: Use 18 ft. raised grass median in lieu of 20 ft and 24 ft medians - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- At the beginning of the project, there is an existing 20' median in the City of Richmond Hill. Therefore, the design team recommends leaving the proposed 20' median at the beginning of the project so the existing median and the proposed median will be consistent. Also, the design team recommends keeping the 24' medians for reasons stated in S-3.

**11. Value Engineering Alternative S-5: Use concrete paved median in lieu of grassed median and eliminate the mowing over the next 30 years - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- A maintenance agreement between the city/county will be obtained. Permits will be issued for landscaping.

**12. Value Engineering Alternative S-6: Use a Tensar type geogrid reinforcement and reduce the amount of base material from 5 inches to 2.5 inches - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- Per the Office of Materials and Research, GDOT does not use Geogrid in pavement designs as a replacement for any standard paving layer (see attached e-mail from AJ Jubran).

**13. Value Engineering Alternative S-7: Use 24 inch wide curb and gutter section in lieu of 30 inch wide section - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- This project is located in the coastal region of Bryan County. This area is very flat. In order to retain as much of the existing asphalt as possible, this project is going to be designed with a 2% profile grade for most of the project length. Using a 24" curb and gutter would cause an increase in gutter spread, and in combination with the flat grade, would increase the number of drainage structures required. The design team feels that the concerns over the flat grades and gutter spread along with the additional cost for drainage structures outweighs what cost savings that would be realized from using the smaller gutter. The design team recommends using the 30" curb and gutter.

**14. Value Engineering Alternative S-8: Place the sidewalk on one side of the road only. Put the sidewalk on the West side - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- There are residential areas on both sides of the road from the beginning of the project to the SR 144 Spur. There is also commercial development taking place in the middle of the project at Port Royal Rd. A Publix grocery store and a McDonalds were recently built in this location, and there is the potential for more commercial development. There is existing pedestrian traffic between the subdivisions and the commercial development, parks and churches along the corridor. Further, additional pedestrian movements are anticipated in the future due to the development of a large recreation complex and schools. The corridor will have very limited opportunity to provide safe crossings for the pedestrians at signalized intersections. Due to pedestrians having to cross the road to access a sidewalk and the very limited number of safe crossings that will be available, the design team recommends having sidewalks on both sides of the road to insure the safe movement of pedestrians between the residents, commercial developments, churches, parks, and schools.

**15. Value Engineering Alternative S-9: Reduce the width of shoulders from 12 ft to 10 ft at locations without sidewalks - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- There are several utilities that will have to be relocated along the project: Atlantic Gas & Light (Gas), City of Richmond Hill (Water & Sewer), Comcast (Cable), and Coastal EMC

(Electrical). The design team recommends keeping the 12' shoulders with sidewalks to allow additional room for the utility relocations.

**16. Value Engineering Alternative S-11: Use two lanes with a raised grass median in lieu of four and retain the existing bridge. Purchase all required R/W, but defer major improvements - *Not Recommended***

This alternative is not recommended for implementation by the Department due to the following reasons.

- This recommendation does not meet the need and purpose. As stated in the disadvantages of this alternative, there would be less traffic capacity and more delays at the intersections. Also this alternative would have to be designed for the future drainage, which would require substantial amount of existing pavement to be removed or overlaid to achieve sufficient drainage required.

**17. Value Engineering Alternative S-12: Use more ditches and less curb and gutter on the east side only; assume a four-lane section - *Not Recommended***

This alternative is not recommended for implementation by the Department due to the following reasons.

- The City of Richmond Hill and Bryan County are in full support of having the curb and gutter sections with sidewalks and bike lanes included. Because of the residential areas on both sides of the road from the beginning of the project to SR 144 Spur and the commercialization taking place in the middle of the project at Port Royal Road, the design team recommends keeping the curb and gutter sections, along with the sidewalk, for pedestrian traffic.

**18. Value Engineering Alternative B-1: Reduce the median on the bridge from 20 ft to 8 ft and taper the median on either side of the bridge - *Not Recommended***

This alternative is not recommended for implementation by the Department due to the following reasons.

- The existing bridge is only 120' long. The taper on each end of the bridge would be 540'. The design team feels like the bridge will provide too little of a tangent section between the two tapers and that there may be driver expectancy issues with the short tangent section.

**19. Value Engineering Alternative B-2: Build a new parallel bridge in lieu of widening the existing bridge. Reduce the area of the bridge - *Not Recommended***

This alternative is not recommended for implementation by the Department due to the following reasons.

- In the original bridge estimate for this project (\$861,120.00), the full bridge width of 92' was used for 120' in length at \$78 per square foot. The estimate should have only

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SR 144 Widening  
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included the widened part. The widened part is 45'7" by 120'. At \$78 per square foot, the original cost should have been \$426,610.00. The proposed estimate in the Alternative was \$437,580.00, which actually results in an increased cost of \$10,970.00. As a result, the design team recommends widening the existing bridge.

**20. Value Engineering Alternative B-3: Add a sidewalk on only the west side of the bridge (new construction side). Do not add sidewalk on the existing bridge - *Not Recommended***

This alternative is **not** recommended for implementation by the Department due to the following reasons.

- Because of the residential areas on both sides of the road from the beginning of the project to SR 144 Spur and the commercial development taking place in the middle of the project at Port Royal Road, the design team recommends keeping the curb and gutter sections, along with the sidewalk on both sides of the road and bridge for pedestrian traffic.

If there are any questions or if additional information is needed, please contact the Project Manager, Travis Dent at (912) 427-5718 or e-mail at [tdent@dot.ga.gov](mailto:tdent@dot.ga.gov).

GWD:BWS:ADO:TD: td

cc:

General File Unit, Atlanta  
Jesup Files

**Dent, Travis**

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**From:** Hardenbrook, Zoe  
**Sent:** Wednesday, March 26, 2008 9:27 AM  
**To:** Saxon, Brad; Scott, Teresa; Dent, Travis  
**Subject:** FW: SR 144- Bryan  
  
**Importance:** High

Mass Confusion....but maybe this settles the issue.

*Zoe Brannen Hardenbrook  
Dist. Rep., Intermodal Programs  
Jesup-District 5  
912-427-5865  
912-427-5763 (Fax)*

**From:** Goodwin, Amy R.  
**Sent:** Tuesday, March 25, 2008 5:08 PM  
**To:** Hardenbrook, Zoe  
**Cc:** Tricia Reynolds  
**Subject:** RE: SR 144- Bryan  
**Importance:** High

Zoe –

Sorry for the confusion, but we just heard from the Bryan County Manager and the plan was approved about 2 months ago by the County Commission. They are sending us the meeting minutes, etc. So – this is a final plan endorsed by the County, so I recommend that the bike lanes or shoulders stay in the project.

Again , sorry for the confusion. We'll get you the latest copy of the finalized plan and copy of a resolution or meeting minutes asap.

Amy R. Goodwin  
State Bicycle & Pedestrian Coordinator  
Georgia Department of Transportation  
2 Capitol Square, SW  
Atlanta, GA 30334  
Phone: 404-657-6692  
Fax: 404-463-4379  
<http://www.dot.ga.gov/travelingingeorgia/bikepedestrian/>  
[agoodwin@dot.ga.gov](mailto:agoodwin@dot.ga.gov)

## Dent, Travis

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**From:** Jubran, Abdallah (AJ)  
**Sent:** Monday, February 09, 2009 11:11 AM  
**To:** Dent, Travis  
**Cc:** Saxon, Brad; Pahn, Steve V  
**Subject:** RE: STP00-0630-00(010), PI#532370, Bryan Co.

Travis,

*We do not use Geogrid in pavement designs as a replacement for any standard paving layer. The industry has presented Geogrid as an alternate to reduce the GAB layer thickness. As a result,*

*We are currently evaluating the replacement of 2 inches of GAB with Geogrid in the shoulder pavement. In addition, Illinois DOT has an ongoing research and evaluation project on the use of Geogrid that we will also be looking into in addition to GDOTs shoulder evaluation. I hope this information helps.*

A.J. Jubran, P.E.  
State Pavement Engineer  
Georgia Department of Transportation  
404-363-7582  
404-363-7684 fax

[ajubran@dot.ga.gov](mailto:ajubran@dot.ga.gov)

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**From:** Dent, Travis  
**Sent:** Friday, February 06, 2009 1:59 PM  
**To:** Jubran, Abdallah (AJ)  
**Subject:** STP00-0630-00(010), PI#532370, Bryan Co.

AJ,

A VE study has been done for the above mentioned project. One of the proposals that the VE Team proposed was using Geogrid Alternate. See Attached. A pavement design has not been done that I am aware of. Do we use this stuff and does it have to be approved by your office. I guess I'm just needing some guidance. Thanks!

Travis J. Dent  
Design Squad Leader  
Jesup Road Design  
GDOT  
phone : 912-427-5718  
fax : 912-427-5763

**PRECONSTRUCTION STATUS REPORT FOR PI:532370-**

**PROJ ID :** 532370-  
**COUNTY :** Bryan  
**LENGTH (MI) :** 4.60  
**PROJ NO.:** STP00-0630-00(010)  
**PROJ MGR:** Odorn, Dennis  
**OFFICE :** District 5  
**CONSULTANT:** No Consultant, GDOT In-House Design  
**SPONSOR :** GDOT  
**DESIGN FIRM:**

**SR 144 EB FROM S OF CR 100 TO S OF CR 154**  
**MPO:** Not Urban  
**TIP #:**  
**MODEL YR :**  
**TYPE WORK:** Widening  
**CONCEPT:** ADD 5U  
**PROG TYPE:** Reconstruction/Rehabilitation  
**BOND PROJ. :**

**MGMT LET DATE :** 06/15/2011  
**MGMT ROW DATE :** 09/18/2009  
**SCHED LET DATE :** 1/11/2012  
**WHO LETS? :** Prepare Plans for Shelf  
**LET WITH :**

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS						STIP AMOUNTS			
						Phase	Approved	Proposed	Cost	Fund	Status	Date Auth	Phase	Cost	Fund
		Concept Development	1/7/1993	3/18/1993	100	PE	2000	2000	784,012.24	Q24	AUTHORIZED	1/31/2000	PE		Q24
		Concept Meeting	1/7/1993	1/7/1993	100	ROW	2008	2010	9,204,538.04	L240	PRECST		ROW	957,000.00	L240
		PM Submit Concept Report	2/3/1993	2/3/1993	100	UTL	2010	2010	367,500.00	L240	PRECST		UTL	0.00	L240
		Receive Preconstruction Concept Approval	3/9/1993	3/9/1993	100	CST	2011	2011	19,900,348.81	L240	PRECST		CST	10,393,000.00	L240
		Management Concept Approval Complete	3/11/1993	3/18/1993	100										
		Revise or Re-validate Approved Concept	8/1/2008	10/17/2008	100										
3/24/2009		Value Engineering Study	8/15/2008		83										
		Public Information Open House Held	9/27/2007	9/27/2007	100										
7/16/2009		Environmental Approval	5/10/2002		25										
		Field Surveys/SDE	12/3/1997	4/8/1999	100										
8/13/2009		Preliminary Plans	6/11/2004		24										
		Preliminary Bridge Design	5/5/2008	5/9/2008	100										
7/23/2009		Underground Storage Tanks			0										
5/28/2009		404 Permit Obtainment			0										
9/7/2009		PFPR Inspection			0										
9/8/2009		R/W Plans Preparation			0										
12/4/2009		R/W Plans Final Approval			0										
11/3/2009		L. & D Approval			0										
10/14/2009		R/W Acquisition			0										
12/7/2009		Slake R/W			0										
4/29/2010		Soil Survey			100										
3/13/2009		Bridge Foundation Investigation	5/23/2006	8/25/2006	0										
12/15/2009		Final Design			0										
10/19/2009		Final Bridge Plans Preparation			0										
12/16/2009		PFPR Inspection			0										
3/8/2011		Submit PFPR Responses (OES)			0										
3/23/2011															

**PDD:** Need concept revision. 9/4/02. Widlen & reconstr. 3/5/03. County wants bypass. 7/27/04.  
**Bridge:** SCP 2/02/09  
**Design:** 2N-Working on prel plans  
**EIS:** SMART/Not on SchedROW/Need Eco (12-17-08)  
**LGPA:** NOTIFICATION LETTER SENT TO BRYAN 4-21-05.  
**Location:** District/11-7-07/Add'l field data complete  
**Planning:** PROJECT LOCATED ON ON-ROAD BICYCLE FACILITY  
**Programming:** #1 5-02/#2 8-05  
**Traffic Op:** CYPISND PLNS FR REVW & S&M when 50% complete/02-25-08  
**Utility:** 1st submissions to design 6/6: 6/28/2007-Ready for PFPR  
**EMG:** RECS/REHAB (WIDENING); FULL FIELD SURVEY

**Acquired by:** DOT  
**Acquisition MGR:**  
**R/W Cert Date:**  
**Cond. Filed:**  
**Relocations:**  
**Acquired:**  
**Total Parcel in ROW System:**  
**Options - Pending:**  
**Condemnations- Pend:**  
**DEEDS CT:**

