

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0011-01(053) Muscogee **OFFICE:** Engineering Services
P.I. No.: 332820
SR 1/US 27 Widening **DATE:** July 22, 2009

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

TO: Brent Story, PE, State Road Design Engineer
Attn.: Brad McManus

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held on February 10-13, 2009. Responses were received on July 16, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-1	Realign SR 1/US 27 to the south/east at the Galena Road/Turnberry Lane intersection	\$694,000	No	The alignment proposed in the plans was chosen to avoid a stream and an historical resource. Implementing this alternate would impact the stream and historical resource.
A-2	Reduce the Median Width from 56 ft to 48 ft	\$493,600	No	The proposed 56 ft median will accommodate the construction of future lanes. The proposed roadway will reach capacity near the design year. The proposed median will also accommodate dual left turn lanes at several locations.
A-3	Reduce urban shoulder width from 16 ft. to 12 ft.	\$674,000	Yes	This will be done.
B-1	Reduce lane width from 12 foot lanes to 11 foot lanes	\$1,083,000	No	During the design year, this project has 35,800 ADT with 8% trucks. Due to the high traffic volumes and high percentage of trucks, 11 foot lanes will not be utilized.

B-3	Evaluate asphalt pavement design depth on Williams Road and Moon Road	\$72,900	No	The VE report stated that based on the traffic data provided, the pavement designs for Williams Road and Moon Road are 54.3% oversized. The pavement design developed by the VE team is incorrect. This design used a lane distribution factor of 0.1 instead of 1.0. Other factors were incorrect as well. The suggested pavement design, when using the correct factors, would be 30% undersized.
C-1	Use depressed median	\$70,600	No	The Columbus Consolidated Government has plans to landscape the median. If a depressed median were used, additional costs for drainage structures and piping would be incurred and could negate the proposed savings.
E-1	Eliminate 5-foot wide sidewalk from one side of corridor	\$627,400	No	There are three schools along the project corridor. Sidewalks are needed on both sides of the road throughout the project to allow pedestrians access to the schools from the residential areas along the corridor.
E-3	Use 2 inch 19 mm mix asphalt sidewalks in lieu of 4 inch concrete	\$243,300	No	Concrete sidewalks are preferred because of their longevity and minimal maintenance. GDOT has experienced heaving, grass intrusion and loose aggregate with asphalt sidewalks.
E-5	Delete EB (or NB) SR 1/US 27 left turn lane at Lullwater Apartments	\$50,000	No	The traffic counts for Lullwater are 2340 ADT for the design year. This is more traffic than Turnberry Lane. The distance between the nearest median opening and this one is 820 ft. There is a large tract of land across the road from the apartments; when it is developed a median opening will most likely be requested. The proposed opening is in the best possible location and will compel the developer to accommodate the opening.

E-6	Eliminate the 5 inch white thermoplastic edge line striping along curb and gutter sections	\$4,600	Yes	This will be done.
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The Office of Engineering Services concurs with the Project Manager's responses.

Approved: Gerald M. Ross  Date: 7.24.09
Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

c: Genetha Rice Singleton
Jason McCook/Brad McManus
Lamar Pruitt
Nabil Raad
Larry Bowman
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE



FILE STP00-0011-01(053) Muscogee
P. I. No. 332820
SR 1/US 27 Widening

OFFICE Road Design

DATE July 15, 2009

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

TO Ron Wishon, Project Review Engineer

SUBJECT VE Study Implementation Meeting Request

This office has received and reviewed the recommendations of the Value Engineering Study Workshop Report dated February 25, 2009. Below are our responses to the recommendations.

Thank you

BAS: MBM



**Office of Road Design's response to the VE study report
GDOT Project STP00-0011-01(053) Muscogee
P. I. No. 332820**

on

Alternative A-1

Description: Realign SR 1 /US 27 to the south/east at the Turnberry Lane intersection area.

Cost savings: \$694,000

Response: Due to the steep grade of Turnberry Lane and Galena Road coupled with the 104-ft width of the mainline the improvements along Turnberry and Galena would have to extend into a stream and a historic resource. In order to minimize the impacts to these resources the road was shifted north.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative A-2

Description: Reduce median width from 56-ft to 48-ft.

Cost Savings: \$493,600

Response: Near the design year the roadway should reach capacity necessitating 6 lanes at that time. As currently designed, the typical section allows for a future inside widening to include a 6-lane section, plus double left turn lanes at the intersections of Moon/Williams, American Way, and Old Guard Road / Cooper Creek Road at Veterans Parkway. The 48-ft section does not allow for positive separation between the turn lanes and opposing traffic. Also, because the Consolidated Government of Columbus has committed to landscaping the median this will reduce the sight distance with the 48-ft more than with the 56-ft median.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative A-3

Description: Reduce urban shoulder width from 16-ft to 12-ft.

Cost Savings: \$674,000

Response: The utilities utilizing the shoulder along this road are power, cable TV, natural gas, sanitary sewer, water, fiber, and telephone. Although a 16-ft shoulder allows the sidewalk to run straight across the driveways without narrowing there are 16 driveways and only 4 of the dustpan type. The needed right-of-way for expansion will be purchased if we use the 56-ft median.

The recommendation of the Road Design Office is: To implement this recommendation.

Alternative B-1

Description: Reduce lane widths from 12-ft to 11-ft.

Cost Savings: \$1,083,000

Response: This project is experiencing 8% trucks and 35,800 Average Daily traffic (ADT) during the design year. With a high percentage of trucks utilizing this corridor coupled with a high volume of traffic this places those trucks closer to light trucks and cars and raises the likelihood of accidents and reduces the level of service for the roadway.

The recommendation of the Road Design Office is: Not to implement this recommendation

Alternative B-3

Description: Evaluate pavement design on Williams and Moon Road.

Cost Savings: \$72,900

Response: The VE Report stated that based on traffic data provided, Williams and Moon Road pavement designs are 54.3% overdesigned. However, the pavement design that was attached to the report is incorrect. This design used a lane distribution factor of 0.1, when it should be using 1.0 for a two-lane facility. Also, it was assumed that Williams / Moon Road is a local side street, and thus the ESAL factor used was 0.4; this factor is too low for a roadway classified as a minor arterial. The correct ESAL is 0.73 for a collector / non- state route. The pavement design suggested, using the correct factors, would be 30% under-designed. Based on the current set of plans the pavement design is 7.2% under-designed, which, based on the GDOT Pavement Design Guide would need to be increased in order to meet the 0 to 5% under design requirement for urban roadways. Thus, the pavement design for Williams / Moon Roads will be left as currently designed, if not increased, in the future.

The recommendation of the Road Design Office is: Not to implement this recommendation in this project.

Alternative C-1

Description: Use depressed median.

Cost Savings: \$70,600

Response: The Columbus Consolidated Government has plans of landscaping the median. A depressed 44-ft would have to include structures and ditches to facilitate drainage. This would allow less room for landscaping and would create future maintenance costs. In addition, there would be the costs (not included in the VE analysis) of placing lateral pipes and associated structures in order to take the flows from the median to the ditches / drainage systems on the outside edges of the roadway section.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative E-1

Description: Eliminate a five foot sidewalk from one side of the project.

Cost Savings: \$627,400

Response: There are three schools along the project corridor: Northside High School, Veterans Memorial Middle School, and North Columbus Elementary School. All three of these schools are located near the midpoint of the proposed project. Thus, sidewalks are warranted on both sides of the road throughout the project to allow pedestrians and students to have adequate access to the schools from residential areas located along the project corridor.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative E-3

Description: Use 2-inch asphalt sidewalks instead of 4-inch Portland cement concrete sidewalks.

Cost Savings: \$243,300

Response: GDOT prefers that sidewalks are paved in concrete because of longevity and maintenance reasons. GDOT has experienced heaving, grass intrusion, and loose aggregate with asphalt sidewalks. Also pedestrians have come to immediately recognize concrete sidewalks whereas asphalt is not as quickly discerned.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative E-5

Description: Delete left turn lane at Lullwater Apartments in the northbound direction.

Cost Savings: \$50,000

Response: The traffic counts for Lullwater are 2340 ADT two-way for the design year. This is more traffic than Turnberry Lane. The distance between nearest median opening and this one is 821-ft and it is roughly halfway between Cooper Creek Road and Turnberry Road. Also there is a large tract of land on the other side of the road. This land will most likely be developed with a request for a median opening. The proposed opening is the best possible location and will force the development to accommodate it.

The recommendation of the Road Design Office is: Not to implement this recommendation.

Alternative BR-3

Description: Eliminate the 5 inch thermoplastic edge line stripe along the curb and gutter sections.

Cost Savings: \$4,600

Response: It is recommended to do this where an overlay creates a small vertical drop between the asphalt and the gutter. Also in rural areas where there is no lighting an edge line stripe is preferred. In this case, there is not a vertical drop between the asphalt travel lane and the gutter nor is it in a rural area.

The recommendation of the Road Design Office is: To implement this recommendation.

PRECONSTRUCTION STATUS REPORT FOR PI:332820-

SR 1/US 27 FM OLD MOON ROAD TO TURNBERRY LANE
 MGMT LET DATE : 05/15/2012
 MGMT ROW DATE : 02/15/2010
 SCHED LET DATE : 8/29/2012
 WHO LETS?: GDOT Let
 LET WITH :

DOT DIST: 3
 CONG. DIST: 3
 BIKE: N
 MEASURE: E
 NEEDS SCORE: 06
 BRIDGE SUFF:

MPO: Columbus TMA
 TIP #: 98-SR-01
 MODEL YR : Widening
 TYPE WORK: WIDEN & RECONST
 CONCEPT: Reconstruction/Rehabilitation
 PROV. for ITS: N
 BOND PROJ :

PROJ ID : 332820- Muscogee
 COUNTY : 1-56
 LENGTH (MI) : STP00-00111-01(053)
 PROJ NO.: Smith, Adam
 PROJ MGR: Program Delivery
 AOH Initials: Local Design, Local PE funds
 OFFICE : Columbus/Muscogee County
 CONSULTANT: Jordan, Jones & Goulding, Inc.
 SPONSOR :
 DESIGN FIRM:

ACTIVITY		ACTUAL START	ACTUAL FINISH	%	Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
8/11/2009	Concept Development Concept Meeting PM Submit Concept Report Receive Preconstruction Concept Approval Management Concept Approval Complete Value Engineering Study Public Information Open House Held Environmental Approval Mapping Field Surveys/SDE	1/15/2003 10/1/2004 3/1/2005 3/15/2005 3/24/2005 10/16/2008 2/10/2004 1/1/2005 7/1/2004 5/1/2004 1/1/2005	4/4/2005 10/1/2004 3/2/2005 3/24/2005 4/4/2005	100 100 100 100 85 100 100 100 100 100 66 0 0 0 0 0 0 0 0 0 100 0 0	PE ROW UTIL CST	1999 2008 2014 2015	1999 2014 2015	3,100,000.00 19,629,212.18 975,000.00 14,823,488.00	Q24 L240 L230S L230S	AUTHORIZED PRECST PRECST PRECST	10/16/1998
11/26/2009	Preliminary Plans Underground Storage Tanks 404 Permit Obtainment PFPR Inspection R/W Plans Preparation R/W Plans Final Approval L & D Approval R/W Acquisition Stake R/W Soil Survey Final Design FFPR Inspection Submit FFPR Responses (OES)	3/14/2008	4/14/2009	100	PE Cost Est Amt: ROW Cost Est Amt: Utility Cost Est Amt: CST Cost Est Amt:	13,995,357.00 975,000.00 14,823,488.00	1999 2014 2015	1,600,000.00 1,600,000.00 1,600,000.00 7,613,000.00	PE ROW UTIL CST		

STIP AMOUNTS

Phase **Cost** **Fund**

PE 3,181,000.00 Q24

ROW 0.00 L240

UTIL 0.00 L230S

CST 7,613,000.00 L230S

District Comments

P.I.M. HELD FEB. 21, 2002 - PIM FOR SHORTER SECTION 2-10-04; CE BEING PREPARED; 8/25/04; CONCEPT MEETING 10/1/04; NEED REVISED PARCEL COUNT; 9/8/04 - 30 PARCELS [10/28/04] - EXPECTING DOC - DEC 05 RW AUTH [5/25/05]. SUE services completed by Work Order - project is not an OCD Turnkey project 9/30/05 (CAH); CE HUNG UP @ OEL [8-21-06]; DEC 07 LET TO CST [9-1-06]; REV CE TO OEL BY 2/19/07 [2-27-07]; JI&G BEHIND SCHED [3-19-07]; CE NEARLY READY FOR FHWA SIGNATURE [1-29-08]

DEEDS CT:

Acquired by: DOT

Acquisition MGR:

R/W Cert Date:

Cond. Filed: 70 Total Parcel in ROW System:

Relocations: Options - Pending:

Acquired: Condemnations- Pend:

