

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: CSNHS-0007-00(885) Chatham **OFFICE:** Engineering Services
P.I. No.: 0007885
CS 650/Grange Road **DATE:** September 12, 2011

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

TO: Bobby K. Hilliard, PE, State Program Delivery Engineer
Attn.: Robert Murphy

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held July 11-14, 2011. Responses were received on September 9, 2011. 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
2	Eliminate 14-foot two-way center turn lane	\$1,243,000	No	Even with the reduction of the number of driveways along Grange Road from 45 to 32, eliminating the 14 ft two way left turn lane will cause additional delay to the through movement along Grange Road by not providing refuge for trucks waiting to turn left into the container yards. These yards generate at least 100 trips per day.
3	Reduce shoulder width to 12 feet with 10 feet paved	Proposed = \$940,000 Actual = \$531,000	Yes, partially	A reduced shoulder width will be implemented from SR 21 to the Georgia Ports Authority's proposed Gate 8 with another reduction in shoulder width occurring from the Gate to the end of the project. The shoulder from SR 21 to Gate 8 will be reduced from 16 ft to 14 ft (12 paved) due to the number of driveways along Grange Road. The 14 ft shoulder will act as a right-turn auxiliary lane to allow trucks refuge during the turning movement, thus mitigating congestion through the corridor. The cost saving of this reduction is \$311,000. The shoulder from Gate 8 to the end of the project will be reduced from 16 ft to 6 ft (4 ft paved). Since there is only one driveway past this point, there is no need for wide shoulders. The cost savings of this reduction is \$220,000.

5	Remove unsuitable material to support the new pavement	(\$1,195,000) Cost Increase	Yes	This will be done as required pending soil survey report from OMR. Cost will vary depending upon depth of undercut.
7	Reduce typical section to a three-lane section with reduced shoulder width west of the Jimmy DeLoach Connector	\$527,000	No	The suggested reduced shoulder width of 10 ft (6 ft paved) will not be implemented because it conflicts with Alt. 3 which will be partially implemented. The assumption that truck traffic decreases by 60% west of the Jimmy DeLoach Connector is not valid since all of the 16 driveways between SR 21 and Jimmy DeLoach Connector serve container yards.
8	Allow a free right turn lane from WB Grange Road to NB SR 21	(\$381,000) Cost Increase	No	The suggested free right turn lane from WB Grange Road to NB SR 21 will not be implemented as it conflicts with the implementation of Alt. 9/11. Allowing a free flow right turn lane onto NB SR 21 from WB Grange Road will increase the scope of the project by requiring the addition of a lane along SR 21 to allow trucks to increase their speed to merge at speed with the mainline traffic stream. The length of the acceleration lane on SR 21 is 1160 ft and will cause additional impacts to a residential driveway and a city street (Fries Road), both located 390 ft and 650 ft north of Grange Road respectively.
9/11	Allow WB Grange Road to SB SR 21 movement and signalize the intersection	(\$14,000) Cost Increase	Yes	This will be done.
12	Do not signalize the Grange Road/SR 25 intersection	\$107,000	No	The District 5 Traffic Operations Engineer recommends placing a signal at the Grange Road and SR 25 intersection as it meets Warrant 1, Condition B – Interruption of Continuous Traffic, due to the anticipated truck volumes crossing through the intersection.
18	Eliminate right turn lanes at the SR 25/Grange Road intersection	\$182,000	No	Based on the traffic counts and high truck percentage, removing the right turn lanes from the SR 25/Grange Road intersection will significantly increase the delay of the through movement by 83 to 107 seconds.

REW/LLM

Attachments

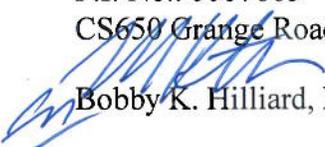
c: Russell McMurry
Bobby Hilliard/Stanley Hill/Robert Murphy
Andy Casey/Darrell Richardson/Albert Welch/Marcela Coll/Chester Thomas
Brad Saxon/Will Murphy/Slade Cole/Teresa Scott
Andrew Hoenig
Ken Werho
Bobby Dollar
Lisa Myers
Matt Sanders

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE



FILE: CSNHS-0007-00(885) Chatham County **OFFICE:** Program Delivery
P.I. No.: 0007885
CS650 Grange Road FM SR21 to GPA #8 **DATE:** September 9, 2011

FROM:  Bobby K. Hilliard, PE, State Program Delivery Engineer

TO: Ronald E. Wishon, State Project Review Engineer
Attn.: Lisa Myers

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, please contact Robert Murphy Project Manager at (404-631-1586).

Sincerely

Bobby Hilliard P.E.

Recommendation 2: Eliminate 14-ft two-way center turn lane.

VE Team Savings: \$ 1,243,000

No, will not implement

- Even with the reduction of the number of driveways along Grange Road from 45 to 32, eliminating the 14-ft two-way center left turn lane will cause additional delay to the through movement along Grange Road by not allowing refuge for trucks during the left-turn movement into local container yards which generate at least 100 trips per day.

Recommendation 3: Reduce shoulder width to 12-ft with 10-ft paved.

VE Team Savings: \$ 940,000

Yes, will partially implement

- A reduced shoulder width will be implemented from SR-21 to the Georgia Ports Authority's (GPA) new proposed Gate 8 with another reduction in shoulder width taking place from Gate 8 to the end of the project.

- The shoulder from SR-21 to GPA's Gate 8 will be reduced from 16-ft (14-ft paved) to 14-ft (12-ft paved) due to the number of driveways along Grange Road. The 14-ft (12-ft paved) shoulder will act as a right-turn auxiliary lane to allow trucks refuge during the turning movement thus mitigating congestion through the corridor. The cost savings of this reduction is \$ 311,000.

- The shoulder from GPA's Gate 8 to the end of the project will be reduced from 16-ft (14-ft paved) to 6-ft (4-ft paved). Since there is only one driveway past this point, the need for wide shoulders is not required. The cost savings of this reduction is approximately \$ 220,000.

- The revised total savings is \$ 531,000.

Recommendation 5: Remove unsuitable material to support the new pavement.

VE Team Savings: (\$ 1,195,000)

Yes, will implement (as required pending soil survey report from OMR, cost to vary on depth of undercut)

Recommendation 7: Reduce typical section to a three-lane section with reduced shoulder width west of Jimmy DeLoach Connector.

VE Team Savings: \$ 527,000

No, will not implement (see Recommendation 3)

- The suggested reduced shoulder width of 10-ft (6-ft paved) will not be implemented as it conflicts with the implementation of **Recommendation 3**.

- The assumption that truck traffic drops 60% west of the Jimmy DeLoach Connector is not valid since all of the 16 driveways between SR-21 and Jimmy DeLoach Connector serve container yards.

Recommendation 8: Allow a free right turn lane from westbound Grange Road to northbound SR-21

VE Team Savings: (\$ 381,000)

No, will not implement

- The suggested free right turn lane from westbound Grange Road to northbound SR-21 will not be implemented as it conflicts with the implementation of **Recommendation 9/11**.
- Allowing a free flow right turn lane onto northbound SR-21 from westbound Grange Road will increase the scope of the project to include adding an additional lane along SR-21 to allow trucks to merge at speed with the mainline traffic stream.
- The length of the acceleration lane on SR-21 is 1160-ft and will cause additional impacts to a residential driveway and a city street (Fries Road), both located 390-ft and 650-ft north of Grange Road respectively.

Recommendation 9/11: Allow westbound Grange Road to southbound SR-21 movement and signalize the intersection

VE Team Savings: (\$ 14,000)

Yes, will implement

Recommendation 12: Do not signalize the Grange Road/ SR-25 intersection

VE Team Savings: \$ 107,000

No, will not implement

- District 5 Traffic Operations Engineer recommends placing a signal at this location as it meets Warrant 1, Condition B – Interruption of Continuous Traffic, due to the anticipated truck volumes crossing through the intersection of SR-25/ Grange Road.

Recommendation 18: Eliminate right turn lanes at the SR-25/ Grange Road intersection

VE Team Savings: \$ 182,000

No, will not implement

- Based on the traffic counts and high truck percentage, removing the right turn lanes from the SR-25/ Grange Road intersection will significantly increase the delay of the through movement by 83 to 107 seconds.
- Each quadrant has right turn volumes (AM or PM) of at least 100 turning vehicles, mainly which are trucks. Based on vehicle length and lost time at the intersection, the queued through vehicles will block the right turning vehicles.
- The intersection completely fails (LOS F) when the right turn lanes are removed from the south to west movement and the west to north movement.

Recommendation 21: Limit project between SR-21 and SR-25
VE Team Savings: \$ 1,645,000

No, will not implement

- Grange Road is part of the National Highway System (NHS) and is designated an intermodal connector. Grange Road extends from SR-21 to a point where it dead ends east of SR-25.
- Grange Road currently serves the Dixie Crystal Sugar plant and will serve in the very near future the GPA's new Gate 8, both of which have access points to Grange Road east of SR-25.
- Not improving Grange Road east of SR-25 under this project will require an additional project to be programmed along with adding additional construction impacts to a very congested area.

Recommendation 26: Reduce center turn lane from 14-ft to 12-ft
VE Team Savings: \$ 196,000

Yes, will implement

Recommendation 30: Only provide center turn lane from railroad crossing to SR-21
VE Team Savings: \$ 412,000

No, will not implement

- The suggestion of providing the center turn lane only from the railroad crossing to SR-21 will not be implemented as it conflicts with the implementation of **Recommendation 3 and 26**.
- The center turn lane will remain from SR-21 to SR-25 as each of the two existing driveways between Norfolk Southern Railroad (NS RR) and SR-25 serves two major distribution centers which produce at least 100 trips per day.
- The distance from NS RR to SR-25 is 1940-ft. Driveway #1 is 600-ft east of NS RR while driveway #2 is 550-ft east of the first. Eliminating the center turn lane will cause additional delay to the through movement along Grange Road by not allowing refuge for trucks during the left-turn movement into these facilities.
- The length of the left turn queue from westbound Grange Road to northbound SR-25 is 700-ft. The distance from driveway #2 to SR-25 is 800-ft. Eliminating the center turn lane for this short of a distance negates any benefit gained from this recommendation.

CAC:DMR:asw 

PRECONSTRUCTION STATUS REPORT FOR PI:0003626,0007885

PROJECT ID: 0007885
COUNTY: Chatham
LENGTH (MI): 1.50
PROJ NO.: CSNHS-0007-00(885)
PROJ MGR: Murphy, Robert P.
AOHD Initials: MAH
OFFICE: Program Delivery
CONSULTANT: No Consultant, GDOT In-House Design
SPONSOR: Port Wentworth
DESIGN FIRM: GDOT Roadway Design A Welch

MGMT LET DATE: 08/15/2013
MGMT ROW DATE: 06/15/2012
BASELINE LET DATE: 08/06/2013
SCHED LET DATE: 1/16/2014
WHO LETS?: GDOT Let
LET WITH:

PRIORITY CODE:
DOT DIST: 5
CONG. DIST: 12
BIKE: N
MEASURE: E
NEEDS SCORE: 3
BRIDGE SUFF:

MPO: Savannah TMA
TIP #: 2006-H-1
MODEL YR: Widening
TYPE WORK: WIDEN & RECONST
CONCEPT: Reconstruction/Rehabilitation
PROV. FOR ITS: N
BOND PROJ.:

BASE START	BASE FINISH	LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				STIP AMOUNTS			
								Activity	Approved	Proposed	Cost	Fund	Status	Date Auth	Activity
3/15/2011	3/15/2011	10/13/2011	10/13/2011	Concept Development	9/14/2007	5/5/2011	75	PE	2006	2006	1,857,727.30	L050	PE	545,291.14	L050
3/29/2011	3/29/2011	9/8/2011	9/8/2011	Concept Meeting	5/5/2011	5/5/2011	100	ROW	2011	2013	459,474.26	L240	ROW	0.00	L240
3/30/2011	3/30/2011	10/13/2011	10/13/2011	PM Submit Concept Report			0	UTL	LOCL	LOCL	211,000.00	LOC	UTL	0.00	LOC
5/3/2011	5/3/2011	10/13/2011	10/13/2011	Management Concept Approval Complete			0	CST	2016	2016	6,877,400.49	L240L	CST	0.00	L240L
3/16/2011	8/16/2011	9/23/2011	9/23/2011	Value Engineering Study	4/29/2011		83								
7/21/2011	7/21/2011	12/2/2011	12/2/2011	Public Information Open House Held			0								
9/20/2011	9/20/2011	10/13/2011	10/13/2011	Environmental Approval	10/19/2010	1/17/2008	25								
5/4/2011	10/18/2011	10/14/2011	10/14/2011	Field Surveys/SDE	12/28/2007	1/17/2008	100								
5/4/2011	7/5/2011	10/14/2011	10/14/2011	Preliminary Plans	12/21/2007	1/17/2008	100								
9/26/2012	3/12/2013	3/8/2013	8/22/2013	Underground Storage Tanks			0								
11/16/2011	11/16/2011	4/27/2012	4/27/2012	404 Permit Obtainment			0								
11/17/2011	2/8/2012	4/30/2012	7/20/2012	FFPR Inspection			0								
2/9/2012	4/10/2012	7/23/2012	9/20/2012	R/W Plans Preparation			0								
12/23/2011	12/27/2011	6/5/2012	6/7/2012	R/W Plans Final Approval			0								
5/9/2012	6/5/2012	10/19/2012	11/15/2012	L & D Approval			0								
8/15/2012	8/28/2012	1/25/2013	2/7/2013	Stake R/W			0								
6/15/2011	10/7/2011	11/25/2011	3/20/2012	Soil Survey			0								
12/28/2011	9/18/2012	6/8/2012	2/28/2013	Final Design			0								
10/17/2012	10/17/2012	3/29/2013	3/29/2013	FFPR Inspection			0								
10/25/2012	11/7/2012	4/8/2013	4/19/2013	Submit FFPR Responses (OES)			0								

Bridge: NO BRIDGE REQUIRED
Design: RD:Thomas & Mickens; Developing Draft Concept Report-mgc
EIS: CE|Not Apvd| Tight Schedule for June 2012 ROW | Dollar 5.18.11
LGPA: PMA REQ PORT WENTWORTH DO UTILITIES 10-5-06.
Prog. Develop: PE STIP AMENDMENT #27 5-06; RW STIP AMENDMENT #5 11-07|RW STIP AMENDMENT #30A 3-09
Railroad: Need Plans
Utility: OCD SUE;TK4.CH15
EMG: RECON/REHAB (WIDENING); TURNKEY
Engr. Services: VE Report distributed July 26,2011

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

Cond. Filed:
Relocations:
Acquired:

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

DEDS CT:

