

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: APD00-0056-02(029) Union & Towns Co. **OFFICE:** Engineering Services
P.I. No.: 122900-
SR 515/ US 76 East Blairsville to **DATE:** October 5, 2015
Young Harris Bypass

FROM: Lisa L. Myers, State Project Review Engineer *llm*

TO: Albert Shelby, State Program Delivery Engineer
Attn.: Steve Adewale

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held August 10-13, 2015. Responses were revised and received on September 29, 2015. 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. Please note, if the implementation of a VE recommendation requires a Design Exception and/or Design Variance, the DE or DV must be requested separately.

ALT #	Description	Potential Savings/ LCC	Implement	Comments
R-1.0	Establish a consistent width of 150' for Right of Way and utilize easement beyond that to allow property owners the opportunity to use their land after construction is completed.	\$1,165,000	No	The District Right of Way Office prefers to have all slopes shown as required Right of Way instead of easement. Also, they indicated that the cost of permanent easement is 90% of the appraised value instead of the 50% used to calculate these savings.
R-2.0	Use 11 feet inside lane widths in lieu of 12 feet for the new pavement for the 4-lane divided section Sta. 116+00 to 420+38.	\$357,000	Yes	This will be done.
R-3.0	Change the 32 feet wide depressed grassed median to a standard 24 feet wide raised grass median for the 4-lane section Sta. 116+00 to 426+00.	\$1,075,000	No	An environmental goal with US Fish & Wildlife for the storm water system on this project is to provide water quality treatment for all runoff from impervious areas within the project limits. The wider depressed median allows for water quality BMP's to be placed within the roadway embankment/foot print. These BMP's will help treat the storm water runoff prior to discharging to receiving waters.

R-5.0	Reduce width of outside paved shoulder from 6.5 feet to 4 feet.	\$456,000	No	The corridor is a designated bike route and a reduction in the paved shoulder width and elimination of the rumble strips would not benefit bike travel along this corridor which has large truck volumes and a curvilinear alignment.
R-9.0	Shift the horizontal alignment closer to existing roadway to reduce retaining walls and minimize impacts from Sta. 130+00 to 170+00.	Proposed \$2,394,000 Actual \$1,454,000	Yes, with modifications	To avoid any additional stream impacts the alignment will be revised between Sta. 145+00 thru 165+00 to reduce wall heights.
R-10.0	Shift the horizontal alignment closer to existing roadway to reduce earthwork and minimize impacts from Sta. 235+00 to 250+00.	Proposed \$278,000 Actual \$189,000	Yes, with modifications	The alignment will be shifted as recommended however the property reduction is residential and not commercial so the difference in savings has been modified.
R-12.0	Eliminate guardrail and utilize traversable slopes at specific locations.	\$17,000	No	At these specific locations the slopes would require additional Right of Way and that cost would be equal or greater than the anticipated savings.

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

Approved: Margaret B. Pirkle Date: 10.22.15
 Margaret B. Pirkle, PE, Chief Engineer

LLM/RLR/MJS

Attachments

- c: Glenn Bowman/Joe Carpenter
 Albert Shelby/Steve Adewale
 Marc Mastronardi
 Ben Rabun/Bill Duvall
 Rick O'Hara/Pamela Baughman
 Harold Mull/Chris York/Rob Mabry
 Ken Werho/Chris Raymond
 Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: APD00-0056-02(029) Union/Towns Co. **Office:** Program Delivery
PI No.: 122900-
SR515/2/US 76 from East Blairsville to **DATE:** September 20, 2015
Young Harris Bypass@ CL/CORR A

FROM: Albert V. Shelby III, State Program Delivery Engineer *Albert Shelby*

TO: Lisa Myers, State Project Review Engineer
Attn: Matt Sanders, Value Engineering Specialist

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 Steve Adewale, Project Manager at 404-631-1578.

KWN ASA
AVS:KWN:ASA



VE ALTERNATIVE #1

Establish a consistent width for ROW of 150'.

VE Team Savings: \$1,165,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

The District 1 ROW Office would prefer to have all slopes, especially 2:1 slopes, as ROW and not permanent easement. Also, they indicated that the cost of permanent easement is 90% of the appraised value and not 50% as used in the recommendation.

VE ALTERNATIVE #2

Use 11' inside lane widths in lieu of 12' lane widths.

VE Team Savings: \$357,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

An 11' inside lane width will be used in lieu of the proposed 12' lane on the four-lane divided section.

VE ALTERNATIVE #3

Change the median from 32' depressed grassed to a GDOT Standard 24' raised grassed median for the 4-lane divided section.

VE Team Savings: \$1,075,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

This will not be done. The reduction in width will be detrimental to meeting water quality improvements requested by the US Fish & Wildlife to maintain bat habitat. An environmental coordination goal for the stormwater system on this project is to provide water quality treatment for all stormwater runoff from impervious areas within the project limits. The wider depressed

median allows for water quality BMPs to be placed within the roadway embankment/footprint. These BMPs will treat the stormwater runoff prior to discharging to receiving waters protecting habitat for protected species foraging. A raised median would make more of these BMPs infeasible. Also, increased pipe size from a median drainage outlet to a storm drain was not accounted for.

VE ALTERNATIVE #5

Reduce width of outside paved shoulder from 6.5' to 4'.

VE Team Savings: \$456,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

This will not be done. The corridor is a designated bike route and a reduction in the paved shoulder width and elimination of the rumble strips is not conducive to bike travel along a corridor with a large truck volume and the curvilinear alignment.

VE ALTERNATIVE #9

Shift horizontal alignment closer to existing from Sta. 130 to 170.

VE Team Savings: \$2,394,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

The horizontal alignment was designed to minimize impacts to Butternut Creek which parallels the existing alignment. The shifts recommended will result in an additional 600 LF of stream impacts and 300 LF of stream relocation. We will revise the alignment between Sta. 145 – 165 to reduce the wall height, which can be done without additional stream impacts. Please note that the PAR process has been completed with agency approval.

Revised Savings: \$1,454,000, see attached calculations.

VE ALTERNATIVE #10

Shift horizontal alignment closer to existing from Sta. 235 to 250.

VE Team Savings: \$278,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

The horizontal alignment will be shifted as recommended by the VE Team. However, the property reduction is a residential property and not commercial. The difference in ROW cost is reflected in the modification.

Revised Savings: \$189,000, see attached calculations.

VE ALTERNATIVE #12

Eliminate guardrails and utilize traversable slopes at specific locations.

VE Team Savings: \$17,000

Disposition Recommendation:

AGREE AGREE, WITH MODIFICATIONS DISAGREE

Explain, comment, and/or discuss rationale for disposition recommendation:

This will not be done. The proposed revision does not take into account the additional ROW that will result with extending the fill line. The cost of additional ROW will be greater than the anticipated savings.

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER R-9.0	PAGE NUMBER 1 of 2
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PROJECT #/PI #: APD00-0056-02(029)/122900-

VE Recommendation

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Permanently Anchored Wall	1/7	LS	1	1,176,247	\$1,176,247
Unclass. Excavation (Reduction)	1/7	CY	243,604	3.82	(\$930,567)
Right of Way (Reduction)	1/7	AC	3.80	107,366	(\$407,991)
SUBTOTAL-COST TO PRIME					(\$162,000)
MARKUP					--
TOTAL CONTRACT COST					(\$162,000)

HNTB Revision

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Permanently Anchored Wall	1/7	LS	1	1,176,247	\$1,785,600
Unclass. Excavation (Reduction)	1/7	CY	185,254	3.82	(\$707,670)
Right of Way (Reduction)	1/7	AC	3.0	107,366	(\$322,098)
SUBTOTAL-COST TO PRIME					\$777,832
MARKUP					--
TOTAL CONTRACT COST					\$777,839

Difference [Revised] \$1,454,168

CALCULATIONS

PROPOSAL NUMBER	R-9.0	PAGE NUMBER	2 of 2
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PROJECT #/PI #:	APD00-0056-02(029)/122900-
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Anchored Wall:

Original Wall Area = 58,350 sq ft (Estimated from Original Cross Sections)
Proposed Wall Area = 46,680 sq ft (Estimated from Original Cross Sections)
Area Change Ratio = $46,680/58,350 = 0.80$

Original Cost = \$2,232,000
Proposed Cost = $\$2,232,000 \times 0.80 = \$1,785,600$

Unclassified Excavation:

Reduction in excavation estimated as the area between the original and proposed walls at each 50 foot station. Volume estimated a sum of areas over tributary 50 ft lengths.
Area = $(1/2)[\text{Original Wall Height} + \text{Proposed Wall Height}][\text{Distance between walls}]$
Volume = $\Sigma[\text{Area} \times 50 \text{ ft tributary length}]$

Proposed Reduction = $\$3.82/\text{cu yd} \times 185,254 \text{ cu yd} = \$707,670$

Right of Way:

Estimated Reduction in right of way = 3.80 acres
Unit Cost = \$107,366 (Property assumed to be commercial property)

Proposed Reduction = $3.0 \text{ acres} \times \$107,366 = \$322,098$

COST ESTIMATING WORKSHEET

PROPOSAL NUMBER	R-10.0	PAGE NUMBER	1 of 1
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PROJECT #/PI #:	APD00-0056-02(029)/122900-
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VE Recommendation

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass. Excavation (Reduction)	1/7	CY	44,616	3.82	(\$170,433)
Right of Way (Reduction)	1/7	AC	1.0	107,366	(\$107,366)
SUBTOTAL-COST TO PRIME					(\$278,000)
MARKUP					--
TOTAL CONTRACT COST					(\$278,000)

HNTB Revision

ITEM	SOURCE CODE	U/M	QTY	UNIT COST	TOTAL COST
Unclass. Excavation (Reduction)	1/7	CY	44,616	3.82	(\$170,433)
Right of Way (Reduction)	1/7	AC	1.0	18,475	(\$18,475)
SUBTOTAL-COST TO PRIME					(\$189,000)
MARKUP					--
TOTAL CONTRACT COST					(\$189,000)

Difference [Revised] \$189,000

Preconstruction Status Report

SR 515/2/US 76 FM E BLAIRSVILLE TO YOUNG HARRIS BP@CLJ/CORR A

PI Number: 122900- **COUNTY:** Union **MPO:** Not Urban **PRIORITY CD:** 1
LENGTH (MI): 5.37 **TIP #:** **DOT DIST:** 9
PROJ NO: AP000-0056-02(029) **MODEL YR:** **CONG. DIST:** 9
PROJ MGR: Adewale, Steve **TYPE WORK:** Widening **BIKE:** N
AOHD INITIALS: AVS **CONCEPT:** Reconstruction/Rehabilitation **MEASURE:** E
OFFICE: Program Delivery **PROG TYPE:** **SUFF:**
CONSULTANT: Consultant Design (DOT contract) **BOND PROJ:** **DESIGN FIRM:** HNTB Corporation

BASELINE LET DAT: **MGMT LET DATE:** 3/15/17 **Print Date:** 10/5/15
SCHED LET DATE: 9/15/15 **WHO LETS?** GDOT Let **Page 1**
LIGHTING TYPE: None **LET WITH:**

Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	1999	1999	\$3,981,588.47	Q98	AUTHORIZED	11/16/98
PE	2014	2014	\$620,000.00	L980	AUTHORIZED	11/16/98
ROW	2016	2017	\$25,960,000.00	L980	PRECST	
CST	2017	2020	\$51,050,364.00	L980	PRECST	
UTL	2017	2020	\$2,528,500.00	L980	PRECST	

BASE START	BASE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%
8/3/10	8/8/12	Concept Development Summary	8/3/10		97
11/30/11	11/30/11	Concept Meeting	11/30/11	8/21/14	100
6/25/12	6/25/12	PM Submit Concept Report			0
8/8/12	8/8/12	Management Concept Approval Complete			0
6/15/12	11/15/12	VE Study Summary	1/13/15		87
5/5/11	5/5/11	Public Information Open House Held	5/5/11	5/5/11	100
2/11/11	5/23/14	Environmental Summary	2/11/11		28
7/11/11	3/21/14	Pub Hear Held/Com Resp (EA/FONSI, GEPA)			0
8/30/10	12/12/12	Database Summary	8/30/10		99
12/13/12	6/20/13	Preliminary Roadway Plans	7/22/14		0
2/12/13	9/13/13	Preliminary Bridge Design Summary	8/17/15		95

Phase	Activity	Cost	Fund
PE	4/9/13	\$4,601,588.47	L980
ROW	9/26/14	\$25,960,000.00	Q98
CST	9/26/14	\$51,050,364.00	L980
UTL	9/26/14	\$2,528,500.00	L980

Bridge: STB 9/28/15 HNTB 95% PL
Design: SHISA- HNTB (TurnKey)
EIS: WIMISSFY16RW WILCERBY01Dec16 | EA | Not Apvd | O'Hara/Bromberg 24Sept15
EMG: RECST/REHAB (WIDENING); FLY 6500/06 FOR STUDY; TURNKEY
Engr Services: VE Study Aug10-13,2015;
LCPA: NOTIFICATION LETTER SENT TO BLAIRSVILLE & UNION 12-9-10.
PDD: LR: 6-22-98 ASSIGNED ROAD DESIGN
Planning: ADDED PER SHIP COMMITTEE MEETING 5-98, Sections A-12.6 & A-13 APD
Programming: CONFIRMED EXEMPT PER FHWA 6-1-2014#4 1-2014#5 6-2015#6 6-2015
STIP: Widen from 2 to 4 lanes - Provide additional capacity - reduce congestion - improve mobility-reduce crash frequency-enhance economic development - Project on GRIP corridor & State Freight Network & if on GRIP/FN
Traffic Op: KBH:SEND PLANS FOR SIGN & MKG WHEN 50% COMP 6/25/98
Utility: OCD SUE: NEED 1st SUBMISSION SUE PLANS 12/02/2013, 7/28/2014.

COST ESTAMTS

Phase	Approved	Proposed	Cost	Fund
PE	\$4,601,588.47			L980
ROW	\$25,960,000.00			Q98
CST	\$51,050,364.00			L980
UTL	\$2,528,500.00			L980

STIP AMOUNTS

Phase	Activity	Cost	Fund
PE	4/9/13	\$4,601,588.47	L980
ROW	9/26/14	\$25,960,000.00	Q98
CST	9/26/14	\$51,050,364.00	L980
UTL	9/26/14	\$2,528,500.00	L980

District Comments

Consultant PM, Dom Saulino: (P)404-946-5745 e-mail dsaulino@hntb.com
 1. Project on schedule. No, PCRF submitted to OPC in July, 2015 to take the schedule up to letting.
 MRD: 5-26-2017
 MLD: 5-29-2020
 Scope and Budget are good.
 Budget Remaining: 49% in PE PHASE.

Pre Parcel CT	250	Total Parcel In ROW System:	Cond Filled:	Acquired by:	DOT	DEEDS CT:
Under Review		Options Pending:	Relocations:	Acquisition MGR:		
Released:		Condemnations - Pend:	Acquired:	R/W Cert Date:		