

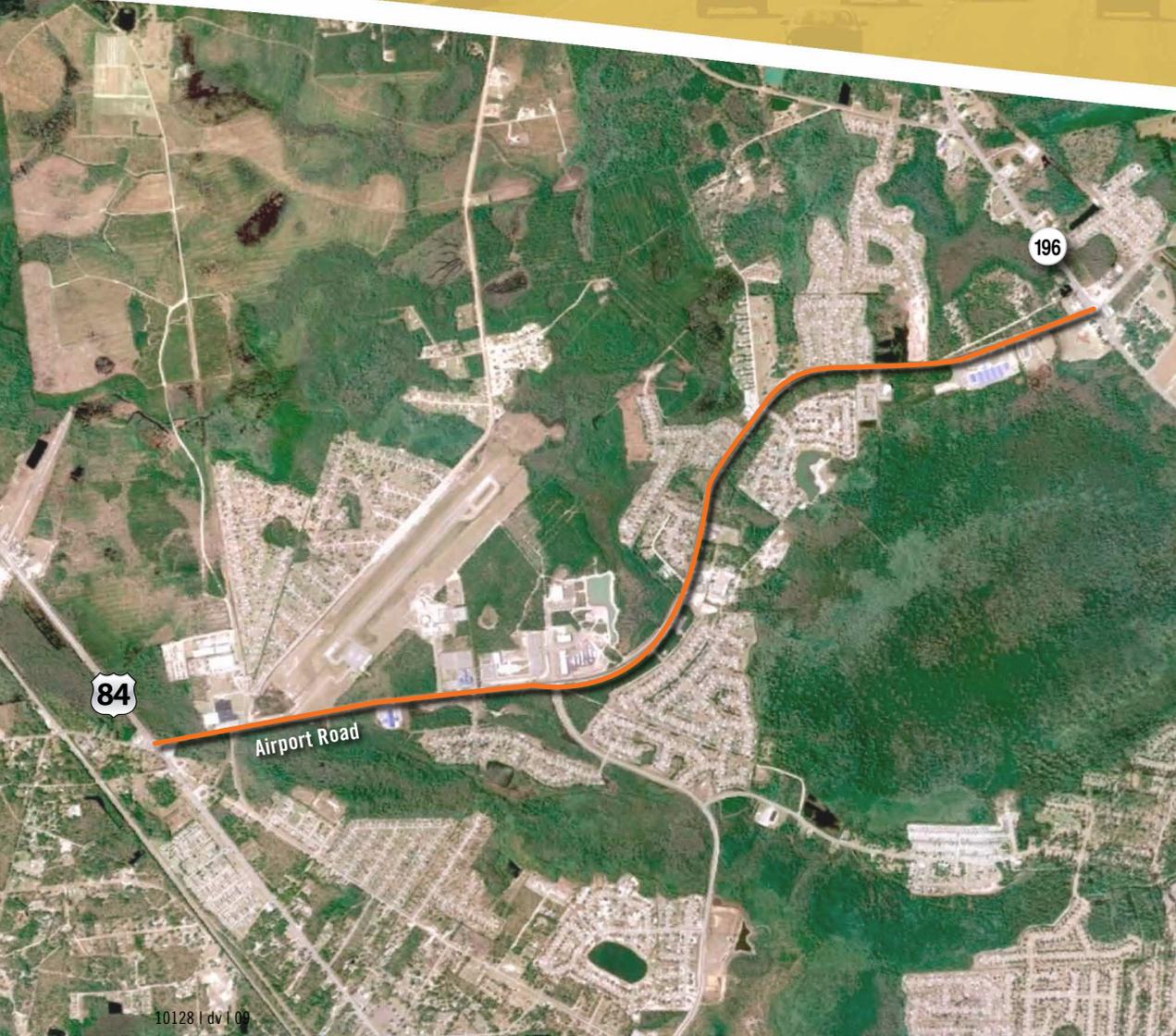
Value Engineering Study Report

Georgia Department of Transportation

STP00-0004-00(917) – P.I. No. 0004917

Widening SR119/Airport Road from US 84 to SR 196

Hinesville, Liberty County



October, 2009



Value Engineering Team



Design Team





October 16, 2009

Ms. Lisa Myers
Design Review Engineer Manager/VE Coordinator
Georgia Department of Transportation-Engineering Services
One Georgia Center
600 W. Peachtree Street NW
Atlanta, GA 30308

RE: Submittal of the final Value Engineering Report
STP00-0004-00(917) – P.I. No. 0004917
Widening SR119/Airport Road from US 84 to SR 196 in Hinesville
Liberty County

Dear Ms. Myers:

Please find enclosed two (2) hard copies and one (1) CD of our final Value Engineering Report for Widening SR119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County.

Using the Value Engineering “Job Plan” – Investigation, Analysis (*Function*), Speculation, Evaluation & Development, the VE Team identified:

- Project goal to be “Improve Safety”
- Six (6) Alternatives to improve the project safety and value of the project
- Two (2) Design Suggestions

We trust that you will find this report to be in proper order. It should be noted that the results of this workshop are volatile in that they can be overcome by the events that accompany the expeditious continuance of the design process. Accordingly, we encourage an equally expeditious implementation meeting to design the disposition of the contents of this report.

On behalf of our VE Team, we thank you very much for this opportunity to work with you and the hard working staff of the Georgia Department of Transportation.

Yours truly,
PBS&J

Les M. Thomas, P.E., CVS-Life
VE Team Leader

Randy S. Thomas, CVS
Assistant Team Leader

Value Engineering Study Report

STP00-0004-00(917)

P.I. No. 0004917

Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville

Liberty County

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EXECUTIVE SUMMARY

INTRODUCTION

The subject of the Value Engineering study is project STP00-0004-00(917) – P.I. No. 0004917, Widening SR119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County. The design for the project has been prepared by THOMAS & HUTTON ENGINEERING CO. At the time of the workshop, the plans had advanced to the preliminary design level.

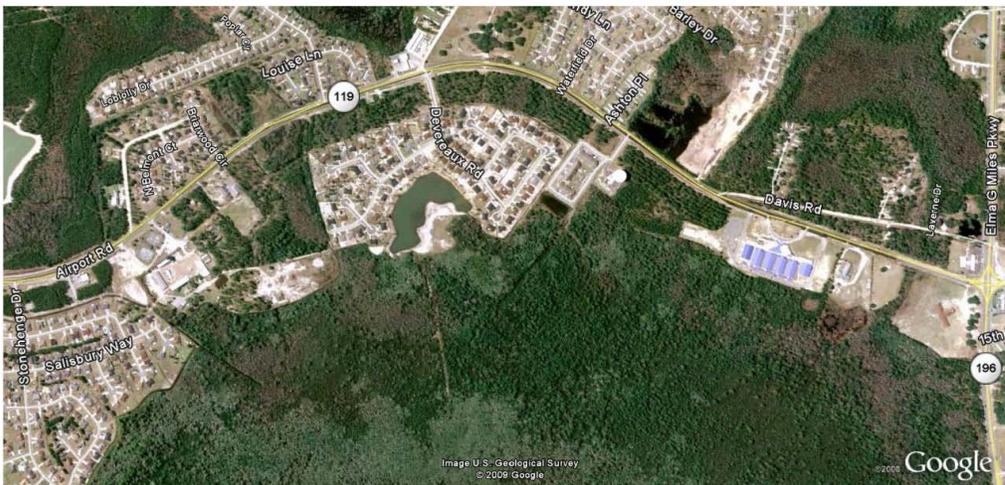
PROJECT DESCRIPTION

The project calls for the widening of Airport Road, which is a two lane (2-12') minor urban arterial road, to become a four lane urban section with a 24' raised median. The design improves the existing intersections including minor realignment to eliminate offset intersections. It also includes a 10' paved multi-use trail along the westerly side and a 6' paved pedestrian walk on the easterly side.



Southerly Portion of Project

The estimated construction cost for the project is \$10,041,626. In addition, Right-of-Way costs are anticipated to be \$7,993,607. The projected total cost for the project is \$18,035,233.



Northerly Portion of Project

PROJECT CONCERNS AND OBJECTIVES

- The accident injury rate for this project is above the state average
- Improve sight distances
- Provide safe access for all users including pedestrians and bicyclists.

VALUE ENGINEERING PROCESS

The Value Engineering team followed the seven step Value Engineering Job Plan as promulgated by SAVE International.

Using the first two steps of the Value Engineering Job Plan - Investigation & Analysis (*Function Analysis*); the VE Team identified the goal of this project to be “improve safety and increase capacity”.

This led the team through the “Speculative, Evaluation & Development phases”.

CONCLUSIONS AND RECOMMENDATIONS

The result was the identification and development of six (6) alternatives and two (2) design suggestions which are recommended herein for implementation – see ***Study Results and the Summary of Alternatives and Design Suggestions***

STUDY RESULTS

INTRODUCTION

This section includes the study results presented in the form of fully developed value engineering alternatives that include descriptions of the original design, description of the alternative design configurations, comments on the technical justifications, opportunities and risks associated with the alternatives, sketches, calculations and technical justification for these alternatives. For the most part, these fully developed alternatives represent an array of choices that clearly could have an impact on the eventual cost and performance of the finished project.

This introductory sheet is followed by a **Summary of Alternatives and Design Suggestions**. It should be noted that the alternatives that are included, which have cost estimates attached are not necessarily representative of the final cost outcome for each alternative. Some of these alternatives have components that are mutually exclusive so they may not be added together.

The users of this report are asked to consider these alternatives and design suggestions as a smorgasbord of choices for selection and use as the project moves forward. The enclosed **Summary of Alternatives and Design Suggestions** may also be used as a “score sheet” within the bounds of an implementation meeting.

COST CALCULATIONS

The cost calculations are intended only as a guide to the approximate results that might be expected from implementation of the alternatives. They should be helpful in making clear choices as to the pursuit of individual alternatives.

The composite mark-up of 10% for the construction cost comparisons was derived from the cost estimate for the project. This estimate can be found in the section of this report entitled **Project Description**.

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Construct a five lane section**

SHEET NO.: **1 of 4**

Original Design:

The original design calls for construction of a four lane facility divided by a 24' raised earthen median.

Alternative:

The alternative proposes construction of a five lane flush median section throughout the project.

Opportunities:

- Reduction in ROW width required
- Utilization of more existing pavement
- Initial savings in curb and gutter quantities

Risks:

- Increase in initial pavement costs
- Less control over access management

Technical Discussion:

Due to relatively low traffic volumes and design speed, it is recommended that a 14' flush median alternative be implemented in-lieu of the proposed four lane divided facility. The design year traffic volumes are within the allowable tolerances for a flush median section. The project can realize savings on ROW and median drainage costs. The larger benefit may come from a reduction in the footprint of the project allowing less encroachment into the numerous wetlands adjacent to existing ROW, as well as to minimize the number of parcels taken to accommodate the improvements.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 5,901,429	\$ 0	\$ 5,901,429
ALTERNATIVE	\$ 5,071,330	\$ 0	\$ 5,071,330
SAVINGS	\$ 830,099	\$ 0	\$ 830,099

Illustration

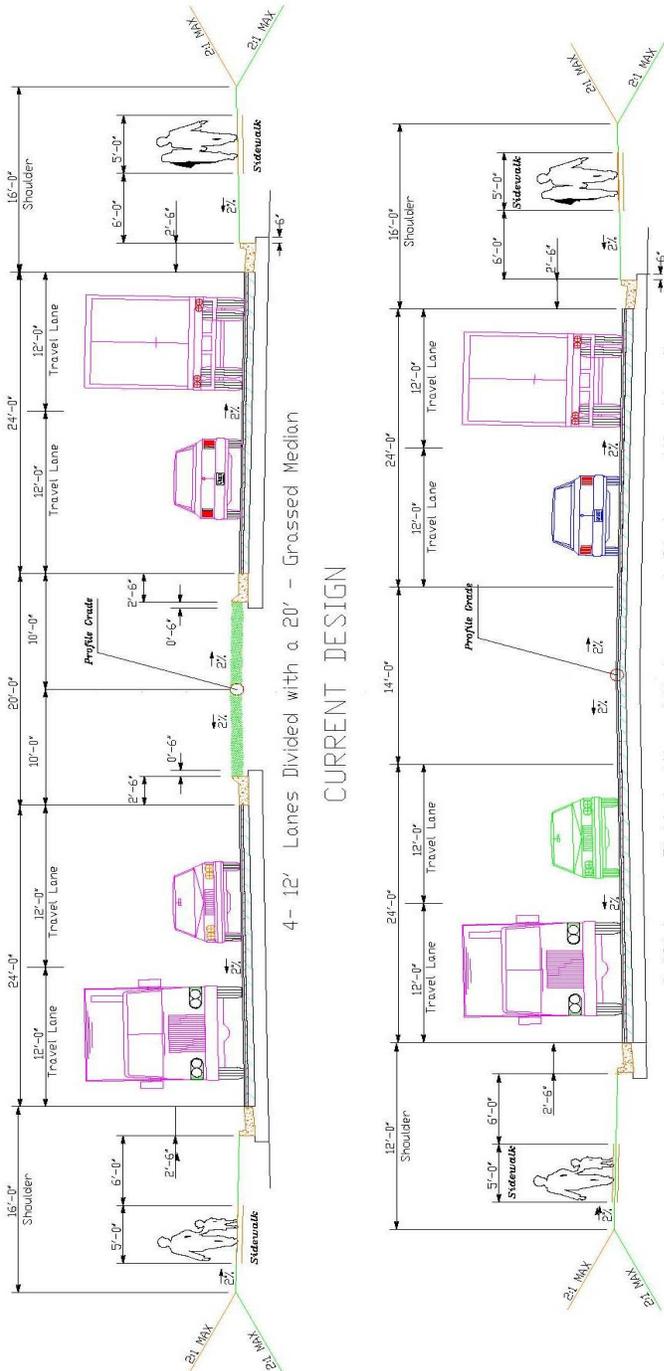


PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Construct a five lane section**

SHEET NO.: **2** of **4**



Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Construct a five lane section**

SHEET NO.: **3** of **4**

Assumptions:

Delete plan quantity for Type 7 C&G following removal of raised median.

Reduce borrow excavation by area. STA 100+05-STA 278+00=>17795 LF x 24' w x .67 h/27=10600 CY borrow saved

ROW savings:

17795 LF x 10' w reduction=177,950SF/43560=4.09 ac ROW reduction

Assume \$30,000/acre based on mixture of residential, commercial, and intensive commercial.

\$30,000 x 4.09=\$122,700 ROW cost savings raw.

\$122,700 x .55 scheduling contingency= +\$67,485

.60 admin/court costs= +\$73,620

.40 inflation factor= +\$49,080

Total burdened costs= \$312,885

Paving for the Alternative-

GAB-

Mainlanes (68' width – 24' existing) x 17,795 LF / (9SF/SY) => 87,500SY

Right turn lanes- 18 each x 12' width x (300' + (180'+0'/2)) / (9SF/SY) => 9,360 SY

Total => 96,860 SY

12.5 mm Superpave-

Mainlanes (62' width) x 17,795 LF / (9SF/SY) => 122,590SY

Right turn lanes- 18 each x 12' width x (300' + (180'+0'/2)) / (9SF/SY) => 9,360 SY

Total =>131,950SY

19.0 mm & 25.00 Superpave-

Mainlanes (62' width – 24' existing) x 17,795 LF / (9SF/SY) => 75,135SY

Right turn lanes- 18 each x 12' width x (300' + (180'+0'/2)) / (9SF/SY) => 9,360 SY

Total => 84,495 SY

Superpave 12.5mm = [(131,950SY x 165#/SY-IN) / (2000#/Ton)] => 10,885 TN

Superpave 19.0mm = [(84,495 SY x 220#/SY-IN) / (2000#/Ton)] => 9,295 TN

Superpave 25.0mm = [(84,495 SY x 440 #/SY-IN) / (2000#/Ton)] => 18,590 TN

10" GAB = 96,860 SY

Cost Worksheet



PROJECT: Georgia Department of Transportation STP00-0004-00(917) - P.I. No. 0004917 Widening SR 119/Airport Road from US 84 to SR 196 in Hinesville Liberty County	ALTERNATIVE NO.: RD-1
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DESCRIPTION: Construct a five lane section	SHEET NO.: 4 of 4
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CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
ROW reduction(see calcs)	LS	1	\$ 312,885	\$ 312,885	0	\$ 312,885	\$ -
441-6740 Type 7 C&G	LF	32,000	\$ 12.00	\$ 384,000	0	\$ 12.00	\$ -
Borrow Excavation	CY	75,000	\$ 4.00	\$ 300,000	64400	\$ 4.00	\$ 257,600
402-3121-25mm Superpave	TN	15,400	\$ 75.00	\$ 1,155,000	18,590	\$ 75.00	\$ 1,394,250
402-4514-19mm Superpave	TN	7,700	\$ 80.00	\$ 616,000	9,295	\$ 80.00	\$ 743,600
402-3130- 12.5mm Superpave	TN	10,315	\$ 70.00	\$ 722,050	10,885	\$ 70.00	\$ 761,950
310-5100- GAB, 10"	SY	125,000	\$ 15.00	\$ 1,875,000	96,860	\$ 15.00	\$ 1,452,900
Sub-total				\$ 5,364,935	\$ 4,610,300		
Mark-up at 10.00%				\$ 536,494	\$ 461,030		
TOTAL				\$ 5,901,429	\$ 5,071,330		

Estimated Savings:	\$830,099
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Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-2

DESCRIPTION: **Use 12' outside, 11' inside travel lanes**

SHEET NO.: **1** of **4**

Original Design:

The original design calls for the construction of 2-12' lanes NB as well as SB.

Alternative:

The alternative proposes to construct a 12' outside lane, and an 11' inside lane on both NB and SB lanes throughout the project.

Opportunities:

- Slight reduction in ROW costs
- Reduction in full depth pavement costs

Risks:

- May be contrary to driver's expectations
- Moderate redesign effort required

Technical Discussion:

Reduction of width of travel lanes throughout the project would result in 2' of full build-up widening that would not have to be constructed, resulting in significant cost savings. Although 11' lanes would require an exception to GDOT policy, AASHTO's "Policy on Geometric Design of Highways 2004" states that 11'-0" lanes are permissible. It also states that under interrupted-flow operating conditions at low speeds (45 mph or less), narrower lanes are normally adequate and have some advantages. (See Pages 472-473). Due to the low speed (45mph) and low % trucks, 11'-0" lanes should pose no operational issues. The provision of a 12' outside travel lane would be a compromise from using either 12' or 11' travel lanes only, allowing additional width on the outside travel lanes for the stated 4% truck travel volume.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 4,873,858	\$ 0	\$ 4,873,858
ALTERNATIVE	\$ 4,604,457	\$ 0	\$ 4,604,457
SAVINGS	\$ 269,401	\$ 0	\$ 269,401

Illustration

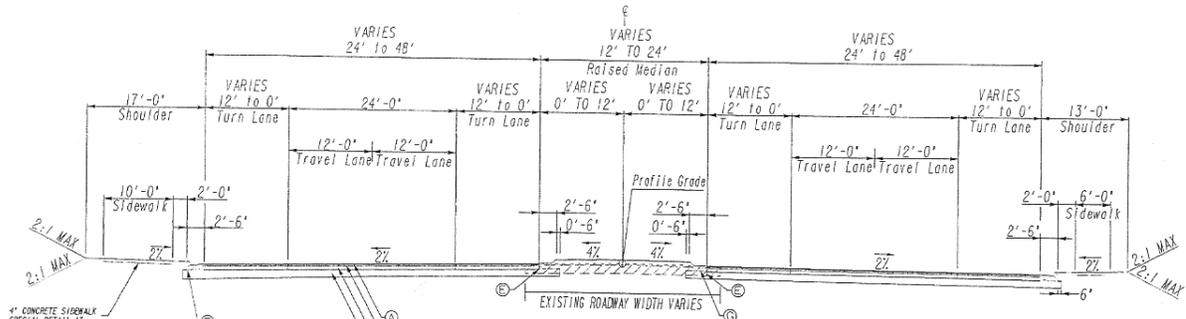


PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-2

DESCRIPTION: **Use 12' outside, 11' inside travel lanes**

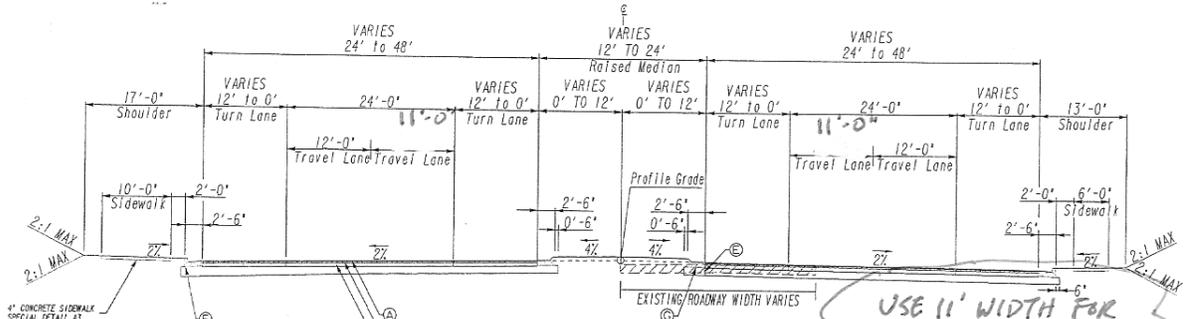
SHEET NO.: **2** of **4**



ORIGINAL DESIGN

TYPICAL SECTION 1
STATE ROUTE 119
URBAN SECTION W/RAISED VARIABLE MEDIAN AND TURNLANES
STA 100+50.00 TO STA 113+50.00
STA 134+58.67 TO STA 143+68.00
STA 200+57.65 TO STA 217+90.22
STA 243+20.93 TO STA 278+00.00

NOT TO SCALE
NOTE: SEE PLANS FOR SUPERELEVATION LOCATIONS



ALTERNATIVE DESIGN

TYPICAL SECTION 2
STATE ROUTE 119
URBAN SECTION W/RAISED VARIABLE MEDIAN AND TURNLANES
STA 113+50.00 TO STA 134+58.67

USE 11' WIDTH FOR INSIDE LANE CONSTRUCTION

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-2

DESCRIPTION: **Use 12' outside, 11' inside travel lanes**

SHEET NO.: **3** of **4**

Reduce pavement width by 1' in both directions from STA 100+05 to STA 278+00.

$17,795 \text{ LF} \times 2 \text{ sides} \times 1' / 9 = 3,954 \text{ SY}$ reduction in full buildup pavement area.

$25 \text{ mm Superpave} = 440 \text{ LB/SY} \times 3,954 / 2,000 = 870 \text{ ton}$ reduction

$19 \text{ mm Superpave} = 220 \text{ LB/SY} \times 3,954 / 2,000 = 435 \text{ ton}$ reduction

$12.5 \text{ mm Superpave} = 165 \text{ LB/SY} \times 3,954 / 2,000 = 326 \text{ ton}$ reduction

$\text{ROW reduction} = 17,795 \text{ LF} \times 2' \text{ w} = 35590 \text{ SF} / 43560 = 0.82 \text{ AC}$ reduction in ROW required

Assume \$30,000/acre based on mixture of residential, commercial, and intensive commercial.

$\$30,000 \times 0.82 = \$24,600$ ROW cost savings raw.

$\$24,600 \times .55 \text{ scheduling contingency} = +\$13,530$

$.60 \text{ admin/court costs} = +\$14,760$

$.40 \text{ inflation factor} = +\$9,840$

Total burdened costs= \$62,730

Cost Worksheet



PROJECT: **Georgia Department of Transportation** ALTERNATIVE NO.:
STP00-0004-00(917) - P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to
SR 196 in Hinesville **RD-2**
Liberty County

DESCRIPTION: **Use 12' outside, 11' inside for travel lanes** SHEET NO.: **4 of 4**

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
402-3121-25mm Superpave	TN	15,400	\$ 75.00	\$ 1,155,000	14,530	\$ 75.00	\$ 1,089,750
402-4514-19mm Superpave	TN	7,700	\$ 80.00	\$ 616,000	7265	\$ 80.00	\$ 581,200
402-3130- 12.5mm Superpave	TN	10,315	\$ 70.00	\$ 722,050	9989	\$ 70.00	\$ 699,230
310-5100- GAB, 10"	SY	125,000	\$ 15.00	\$ 1,875,000	121,046	\$ 15.00	\$ 1,815,690
ROW reduction(see calc. page	AC	1	\$ 62,730	\$ 62,730	0	\$ 62,730	
Sub-total				\$ 4,430,780			
Mark-up at 10.00%				\$ 443,078			
TOTAL				\$ 4,873,858	\$ 4,604,457		

Estimated Savings: \$269,401

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Use a 20' raised median**

SHEET NO.: **1** of **4**

Original Design:

The original design calls for the construction of a 24' raised earthen median throughout the project.

Alternative:

The alternative proposes using a 20' raised earthen median throughout the project.

Opportunities:

- Reduction in ROW costs
- Reduction in borrow quantities
- Reduces maintenance area

Risks:

- May require additional eyebrow pavement to accommodate turn radii

Technical Discussion:

The alternative proposes reducing the width of the raised median from 24' to 20'. The reduction in width will have the effect of reducing ROW and borrow costs. In addition, narrowing the footprint of the roadway will help in minimizing, or eliminating the need to take structures from STA 100+00 TO STA 110+00, as well as help prevent encroachment on the wetlands which are prevalent on the east side of the project.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 467,165	\$ 0	\$ 467,165
ALTERNATIVE	\$ 322,230	\$ 0	\$ 322,230
SAVINGS	\$ 144,935	\$ 0	\$ 144,935

Illustration

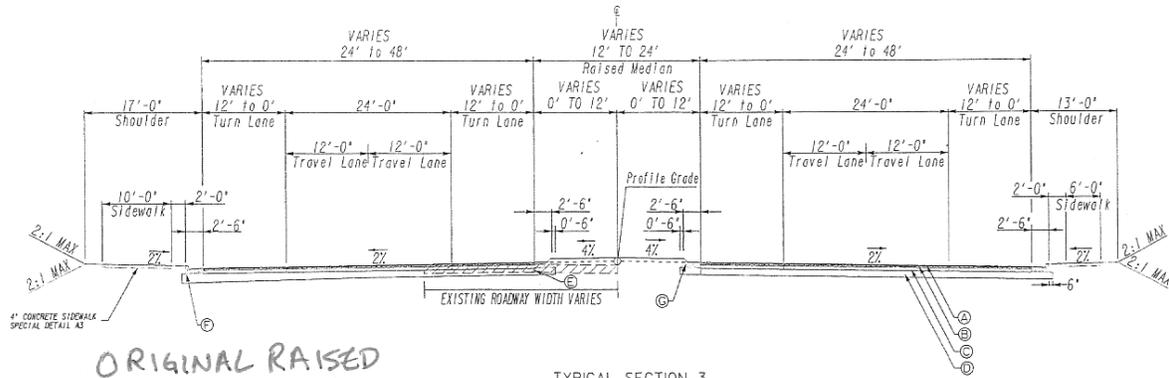


PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Use a 20' raised median**

SHEET NO.: **2** of **4**

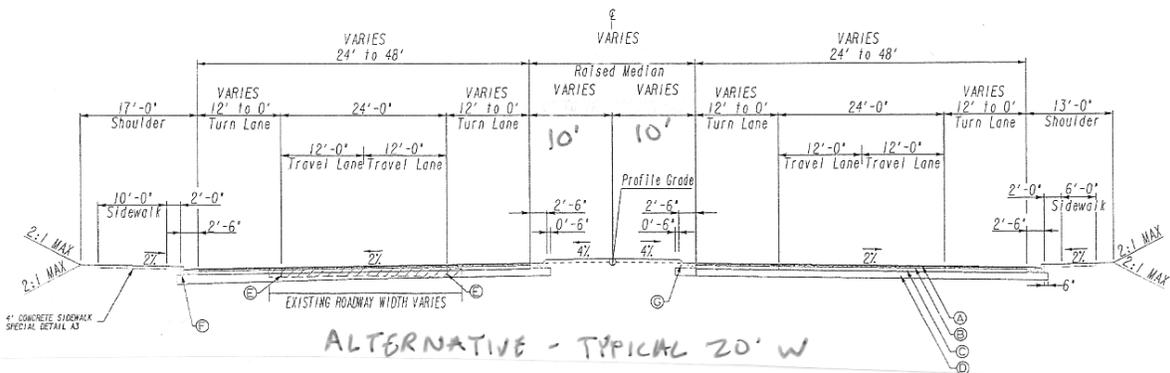


**ORIGINAL RAISED
MEDIAN WIDTH -
TYPICAL - 24'**

TYPICAL SECTION 3
STATE ROUTE 119
URBAN SECTION W/RAISED VARIABLE MEDIAN AND TURNLANES
STA 134+58.67 TO STA 200+57.65

NOT TO SCALE

SEE PLANS FOR SUPERELEVATION LOCATIONS



ALTERNATIVE - TYPICAL 20' W

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-3

DESCRIPTION: **Use a 20' raised median**

SHEET NO.: **3** of **4**

Assumptions:

Reduce median width from 24' to 20' throughout project from STA 100+05 to STA 278+00=>17,795LF

17795 LF x 4' w reduction=71,180SF/43560=1.63 ac ROW reduction

Assume \$30,000/acre based on mixture of residential, commercial, and intensive commercial.

\$30,000 x 1.63=\$48,900 ROW cost savings raw.

\$48,900 x 55% scheduling contingency= +\$26,895

60 % admin/court costs= +\$29,340

40 % inflation factor= +\$19,560

Total burdened costs= \$124,695

Borrow excavation=71,180 SF x 0.67' thickness/27 = 1,766CY reduction

Cost Worksheet



PROJECT: **Georgia Department of Transportation** ALTERNATIVE NO.:
STP00-0004-00(917) - P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to **RD-3**
SR 196 in Hinesville, Liberty County

DESCRIPTION: **Use a 20' raised median** SHEET NO.: **4 of 4**

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
206-0002 Borrow Exc.	CY	75,000	\$ 4.00	\$ 300,000	73,234	\$ 4.00	\$ 292,936
ROW costs saved(see calcs)		1	\$ 124,695	\$ 124,695	0	\$ 124,695	
Sub-total				\$ 424,695			\$ 292,936
Mark-up at 10.00%				\$ 42,470			\$ 29,294
TOTAL				\$ 467,165			\$ 322,230
Estimated Savings:							\$144,935

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-4

DESCRIPTION: **Use a 5' sidewalk in-lieu of 6' sidewalk**

SHEET NO.: **1** of **4**

Original Design:

The original design calls for construction of a 6' wide sidewalk along the east side of the project.

Alternative:

The alternative proposes constructing a 5' wide sidewalk along the east side of the project.

Opportunities:

- Reduction in concrete sidewalk quantities
- Requires less ROW

Risks:

- Decrease in area for pedestrian traffic

Technical Discussion:

The alternative proposes constructing a standard 5' width sidewalk throughout the east side of the project from STA 100+05 to STA 278+00 instead of the originally designed 6' sidewalk. This is the standard width sidewalk for the purpose intended.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,031,762	\$ 0	\$ 1,031,762
ALTERNATIVE	\$ 932,217	\$ 0	\$ 932,217
SAVINGS	\$ 99,545	\$ 0	\$ 99,545

Illustration

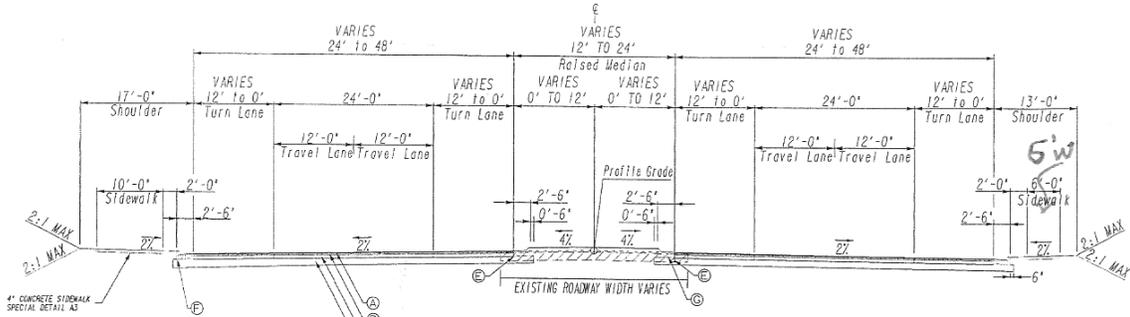


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Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-4

DESCRIPTION: **Use a 5' sidewalk in lieu of 6' sidewalk**

SHEET NO.: **2** of **4**

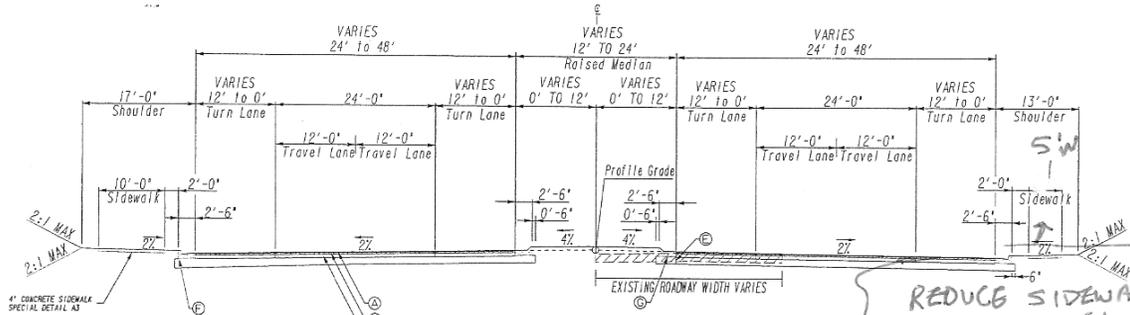


ORIGINAL

TYPICAL SECTION 1
STATE ROUTE 119
URBAN SECTION W/RAISED VARIABLE MEDIAN AND TURNLANES
STA 100+50.00 TO STA 113+50.00
STA 134+58.67 TO STA 143+68.00
STA 200+57.65 TO STA 217+90.22
STA 243+20.93 TO STA 278+00.00

NOT TO SCALE

NOTE: SEE PLANS FOR SUPERELEVATION LOCATIONS



ALTERNATIVE

TYPICAL SECTION 2
STATE ROUTE 119
URBAN SECTION W/RAISED VARIABLE MEDIAN AND TURNLANES
STA 113+50.00 TO STA 134+58.67

NOT TO SCALE

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-4

DESCRIPTION: **Use a 5' sidewalk in-lieu of 6' sidewalk**

SHEET NO.: **3** of **4**

Reduce 6' sidewalk width to 5' width on east side of project from STA 100+05 to STA 278+00.

$17,795\text{LF} \times 1' \text{ width reduction}/9=1977\text{SY}$

$\text{ROW reduction} = 17,795/43560 = 0.41/\text{AC}$

Assume \$30,000/acre based on mixture of residential, commercial, and intensive commercial.

$\$30,000 \times 0.41 \text{ acre} = \$12,300 \text{ ROW cost savings raw.}$

$\$12,300 \times 55\% \text{ scheduling contingency} = +\$6,765$

$60\% \text{ admin/court costs} = +\$7,380$

$40\% \text{ inflation factor} = +\$4,920$

Total burdened costs= \$31,365

Cost Worksheet



PROJECT: Georgia Department of Transportation STP00-0004-00(917) - P.I. No. 0004917 Widening SR 119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County	ALTERNATIVE NO.: RD-4
DESCRIPTION: Use a 5' sidewalk in lieu of a 6'.	SHEET NO.: 4 of 4

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
441-0104- Conc Sidewalk;4"	SY	30,220	\$ 30.00	\$ 906,600	28,249	\$ 30.00	\$ 847,470
ROW reduction(see calcs)		1	\$ 31,365.00	\$ 31,365	0	\$ 31,365	
Sub-total				\$ 937,965			\$ 847,470
Mark-up at 10.00%				\$ 93,797			\$ 84,747
TOTAL				\$ 1,031,762			\$ 932,217
Estimated Savings:							\$99,545

Value Analysis Design Alternative



PROJECT:	Georgia Department of Transportation STP00-0004-00(917) – P.I. No. 0004917 Widening SR 119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County	ALTERNATIVE NO.:	RD-7
DESCRIPTION:	Modify alignment from Sta. +/- 199+00 to Sta. +/- 210+00 to reduce residential displacements	SHEET NO.:	1 of 4

Original Design:

The original design proposes a roadway centerline that closely matches the existing roadway centerline.

Alternative:

The alternative would propose a minor adjustment to the approach tangent and utilization of a significantly longer horizontal curve at PI Station 204+52 in order to move the proposed roadway to the east.

Opportunities:

- Reduced paving costs
- Reduced R.O.W cost/displacement

Risks:

- Increased wetland impacts
- Minimal re-design effort

Technical Discussion:

By utilizing a significantly longer horizontal curve at PI Station 204+52, it will push the alignment to the east and allow you to avoid displacing the four residences on the west side of the roadway. Moving the roadway eastwardly will not only reduce the R.O.W. cost by eliminating displacements, but it will also increase the amount of existing pavement that can be retained. The increased wetland impacts should be manageable. The project will already require some mitigation due to unavoidable wetland impacts. Discussions with OEL indicate the increased impacts due to this modification should not be considered significant and the benefits are substantial.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 1,364,241	\$ 0	\$ 1,364,241
ALTERNATIVE	\$ 22,000	\$ 0	\$ 22,000
SAVINGS	\$ 1,342,241	\$ 0	\$ 1,342,241

Illustration

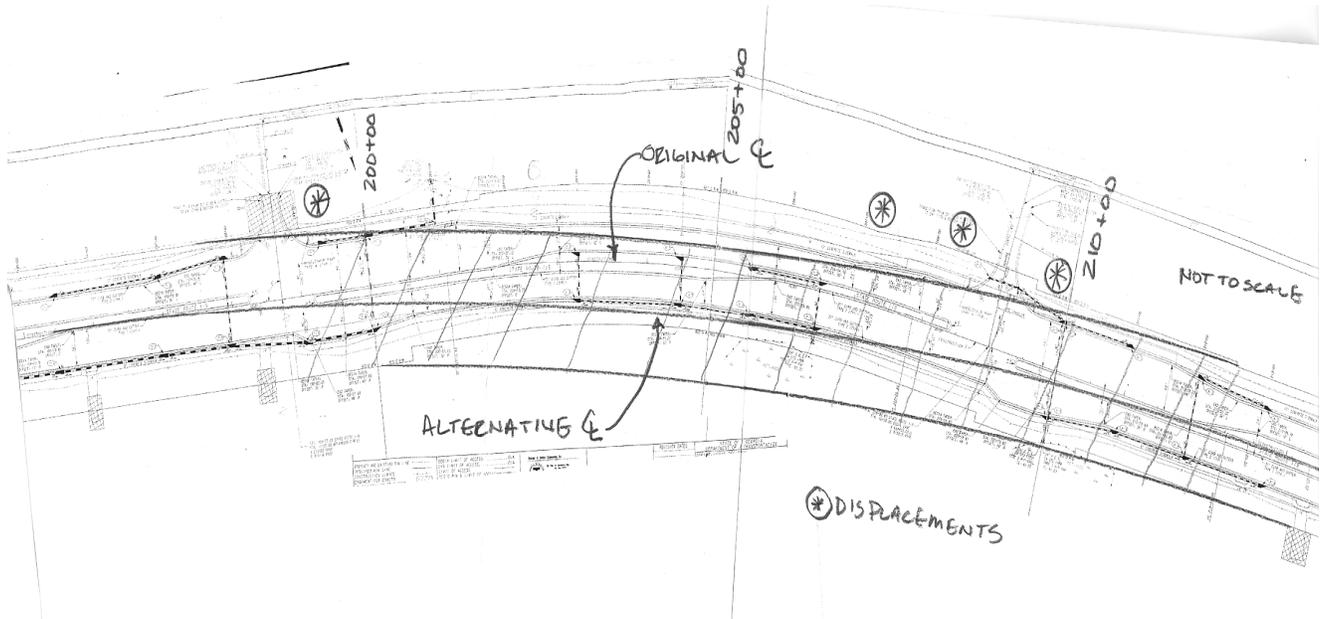


PROJECT: Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County

ALTERNATIVE NO.:
RD-7

DESCRIPTION: **Modify alignment from Sta. +/- 199+00 to Sta. +/- 210+00
to reduce residential displacements.**

SHEET NO.: 2 of 4



Current Design with Alternate Alignment Design

Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-7

DESCRIPTION: **Modify alignment from Sta. +/- 199+00 to Sta. +/- 210+00
to reduce residential displacements**

SHEET NO.: **3** of **4**

Right of Way: Assume the 4 displacements can be avoided

Buildings (4/5 x \$480,317)	=	\$384,570	
4 lots @ \$17,500 each	=	\$70,000	
Net Cost			= \$ 454,570
Scheduling	55%	= \$ 250,014	
Administrative	60%	= \$ 272,742	
Inflation	40%	= \$ 181,828	
Total			= \$ 1,159,154

Paving:

Assume an additional 800 LF of existing pavement can be saved.

800 LF X 24 FT = 19,200SF / (9SF/SY) => 2134 SY

Superpave 12.5mm	=	[(0SY x 165#/SY-IN) / (2000#/Ton)]	=>	0 TN
Superpave 19.0mm	=	[(2134 SY x 220#/SY-IN) / (2000#/Ton)]	=>	235 TN
Superpave 25.0mm	=	[(2134 SY x 440 #/SY-IN) / (2000#/Ton)]	=>	470 TN
10" GAB	=	2134 SY		

Wetland Mitigation:

Assume 8 credits per acre @ \$5,000/ credit

(100 FT + 150 FT) x (30' width) / (43560 SF/AC) = 0.172AC => 0.5 AC

0.5 AC x 8 credits = 4 CR

Cost Worksheet



PROJECT:	Georgia Department of Transportation STP00-0004-00(917) - P.I. No. 0004917 Widening SR 119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County	ALTERNATIVE NO.:	RD-7
DESCRIPTION:	Modify alignment from Station +/- 199+00 to Station +/- 210+00 to reduce residential displacements	SHEET NO.:	4 of 4

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
R.O.W.	LS	1	\$ 1,154,159	\$ 1,154,159	0		\$ -
Wetland Mitigation	CR	0		\$ -	4	\$ 5,000	\$ 20,000
19.0 mm Superpave	TN	235	\$ 80	\$ 18,800	0	\$ 80	\$ -
25.0 mm Superpave	TN	470	\$ 75	\$ 35,250	0	\$ 75	\$ -
G.A.B.	SY	2,134	\$ 15	\$ 32,010	0	\$ 15	\$ -
Sub-total				\$ 1,240,219			\$ 20,000
Mark-up at 10.00%				\$ 124,022			\$ 2,000
TOTAL				\$ 1,364,241			\$ 22,000

Estimated Savings: \$1,342,241

Value Analysis Design Suggestion



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-11

DESCRIPTION: **Re-align Hardman Road**

SHEET NO.: **1 of 1**

Original Design:

The original design currently leaves existing Hardman Road in place with a skew of 67° 20'.

Alternative:

The alternative would propose re-aligning the Hardman Road to 90° angle at about ~Station 116+00.

Opportunities:

- Improve roadway geometrics
- Eliminate roadway skew

Risks:

- Additional paving costs
- Additional R.O.W. costs

Technical Discussion:

The current plans relocate Shaw Road to align with Hardman Road. It does not however correct the skew angle of existing Hardman Road. The Hardman/Shaw Road intersection could be re-aligned at a 90° angle without substantively increasing any impacts other than minor increases in paving and R.O.W. costs.

Value Analysis Design Suggestion



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Provide access to Airport**

SHEET NO.: **1 of 1**

Original Design:

The original design does not provide access to the airport hangar.

Alternative:

The alternative would propose re-aligning the “airport hangar road” at ~Station 124+00

Opportunities:

- Improve roadway geometrics
- Eliminate roadway skew

Risks:

- Additional paving costs
- Additional R.O.W. costs

Technical Discussion:

The current plans apparently have no provisions to provide vehicular access to the Airport hangar closest to the highway.

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-15

DESCRIPTION: **Outfall the individual inlets in wetland areas**

SHEET NO.: **1** of **4**

Original Design:

The original design proposes tying a series of inlets to a single outfall.

Alternative:

The alternative would be to provide an outfall at each individual inlet in those areas where the existing drainage currently sheet flows to a wetland area.

Opportunities:

- Improve detention
- Increase time of concentration
- Reduce drainage cost
- Reduce future maintenance costs
- Improve wetland health
- Reduce the concentration of storm water discharge

Risks:

- Increased discharge points

Technical Discussion:

By providing an outfall for each individual inlet it will reduce the concentration of the existing sheet flow that “feeds” the wetland areas. This will not only improve the drainage characteristics of the proposed system, it will improve the health of the wetland by more evenly distributing the water flow. This approach will require determining if the current flow is allowed to reach the wetland or if it is contained within the confines of the roadway ditches

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 92,400	\$ 0	\$ 92,400
ALTERNATIVE	\$ 20,222	\$ 0	\$ 20,222
SAVINGS	\$ 72,178	\$ 0	\$ 72,178

Illustration

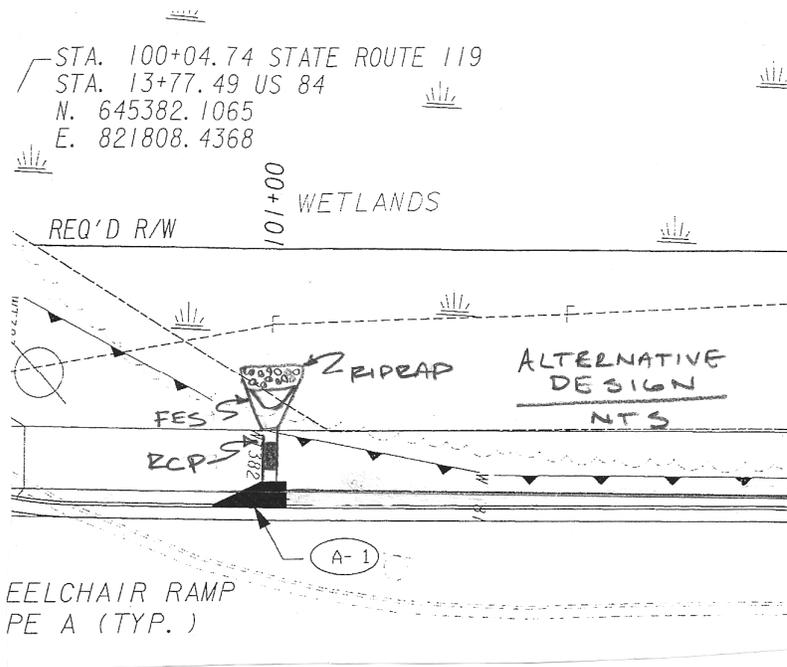
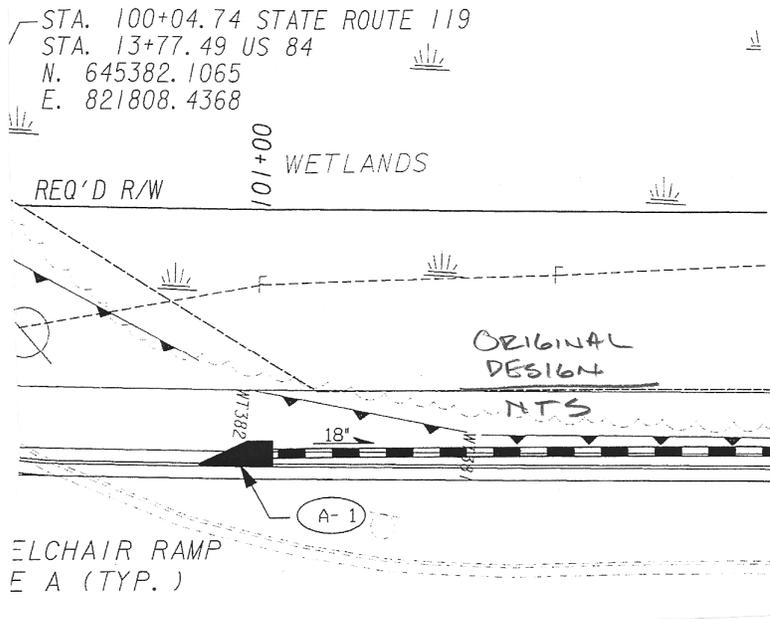


PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-15

DESCRIPTION: **Outfall individual inlets in wetland areas**

SHEET NO.: **2** of **4**



Calculations



PROJECT: **Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

ALTERNATIVE NO.:
RD-15

DESCRIPTION: **Outfall the individual inlets in wetland areas**

SHEET NO.: **3** of **4**

Assume 12 locations where the longitudinal trunk line can be eliminated @ 200 LF each.
12 EA x 200 LF = 2400 LF

Additional outfall pipe-
12 EA x 200 LF = 2400 LF

Additional Riprap-
Average = 12' x 6' = 72SF
12 EA x 72 SF / 9SF/SY = 96 SY

Additional FES-
12 each

Cost Worksheet



PROJECT: **Georgia Department of Transportation** ALTERNATIVE NO.:
STP00-0004-00(917) - P.I. No. 0004917
Widening SR 119/Airport Rd. from US 84 to SR 196 in Hinesville, Liberty County **RD-15**

DESCRIPTION: **Outfall the individual inlets in wetland areas** SHEET NO.: **4 of 4**

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
18" RCP	LF	2,400	\$ 35	\$ 84,000	240	\$ 35	\$ 8,400
18' FES	EA	0	\$ 480	\$ -	12	\$ 480	\$ 5,760
Riprap	SY	0	\$ 40	\$ -	96	\$ 40	\$ 3,840
Filter Fabric	SY	0	\$ 4	\$ -	96	\$ 4	\$ 384
Sub-total				\$ 84,000			\$ 18,384
Mark-up at 10.00%				\$ 8,400			\$ 1,838
TOTAL				\$ 92,400			\$ 20,222

Estimated Savings: \$72,178

PROJECT DESCRIPTION

INTRODUCTION

The subject of the Value Engineering study is project STP00-0004-00(917) – P.I. No. 0004917, Widening SR119/Airport Road from US 84 to SR 196 in Hinesville, Liberty County. The design for the project has been prepared by THOMAS & HUTTON ENGINEERING CO. At the time of the workshop, the plans had advanced to the preliminary design level.

PROJECT DESCRIPTION

The project calls for the widening of Airport Road, which is a two lane (2-12') minor urban arterial road, to become a four lane urban section with a 24' raised median. The design improves the existing intersections including minor realignment to eliminate offset intersections. It also includes a 10' paved multi-use trail along the westerly side and a 6' paved pedestrian walk on the easterly side.



Southerly Portion of Project

The estimated construction cost for the project is \$10,041,626. In addition, Right-of-Way costs are anticipated to be \$7,993,607. The projected total cost for the project is \$18,035,233.



Northerly Portion of Project

REPRESENTATIVE DOCUMENTS

The VE Team utilized the the preliminary plans provided by Thomas & Hutton Engineering Co. and the following project documents:

- Construction Cost Estimate
- Concept Report Right-of-Way Cost Estimate
- Concept Report
- Project Location Maps
- Typical Road Section
- Traffic Analysis

Estimate Report for file "004917"

Section Roadway					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	750000.00	TRAFFIC CONTROL -	750000.00
153-1300	1	EA	75000.00	FIELD ENGINEERS OFFICE TP 3	75000.00
163-0232	50	AC	250.00	TEMPORARY GRASSING	12500.00
163-0240	10	TN	200.00	MULCH	2000.00
163-0300	10	EA	1200.00	CONSTRUCTION EXIT	12000.00
165-0010	35000	LF	0.60	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	21000.00
171-0010	17500	LF	2.00	TEMPORARY SILT FENCE, TYPE A	35000.00
201-1500	1	LS	350000.00	CLEARING & GRUBBING -	350000.00
205-0001	23000	CY	3.00	UNCLASS EXCAV	69000.00
206-0002	75000	CY	4.00	BORROW EXCAV, INCL MATL	300000.00
207-0203	6525	CY	35.00	FOUND BKFILL MATL, TP II	228375.00
310-5100	125000	SY	15.00	GR AGGR BASE CRS, 10 INCH, INCL MATL	1875000.00
402-1812	2000	TN	70.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	140000.00
402-3121	15400	TN	75.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	1155000.00
402-3130	10315	TN	70.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	722050.00
402-4514	7700	TN	80.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL POLYMER-MODIFIED BITUM MATL & H LIME	616000.00
413-1000	19500	GL	2.50	BITUM TACK COAT	48750.00
441-0018	350	SY	60.00	DRIVEWAY CONCRETE, 8 IN TK	21000.00
441-0104	30220	SY	30.00	CONC SIDEWALK, 4 IN	906600.00
441-6022	34740	LF	12.00	CONC CURB & GUTTER, 6 IN X 30 IN, TP 2	416880.00
441-6740	32000	LF	12.00	CONC CURB & GUTTER, 8 IN X 30 IN, TP 7	384000.00
446-1200	1300	SY	2.00	PVMT REINF FABRIC FULL WIDTH, TYPE 2	2600.00
634-1200	50	EA	90.00	RIGHT OF WAY MARKERS	4500.00
641-1200	100	LF	20.00	GUARDRAIL, TP W	2000.00
641-5001	1	EA	750.00	GUARDRAIL ANCHORAGE, TP 1	750.00
641-5012	1	EA	2000.00	GUARDRAIL ANCHORAGE, TP 12	2000.00
700-6910	100	AC	650.00	PERMANENT GRASSING	65000.00
700-7000	60	TN	60.00	AGRICULTURAL LIME	3600.00
700-8000	60	TN	400.00	FERTILIZER MIXED GRADE	24000.00
Section Sub Total:					\$8,244,605.00

Section Traffic Signal					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
639-4004	16	EA	7000.00	STRAIN POLE, TP IV	112000.00
647-1000	4	LS	70000.00	TRAFFIC SIGNAL INSTALLATION NO -	280000.00
647-2120	20	EA	640.00	PULL BOX, PB-2	12800.00
647-9999	1	Lump Sum	100000.00	SIGNS	100000.00
Section Sub Total:					\$504,800.00

Section Drainage					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
550-1180	9800	LF	35.00	STORM DRAIN PIPE, 18 IN, H 1-10	343000.00
550-1240	3800	LF	40.00	STORM DRAIN PIPE, 24 IN, H 1-10	152000.00
550-1300	6700	LF	45.00	STORM DRAIN PIPE, 30 IN, H 1-10	301500.00
550-1360	700	LF	60.00	STORM DRAIN PIPE, 36 IN, H 1-10	42000.00
550-1420	700	LF	80.00	STORM DRAIN PIPE, 42 IN, H 1-10	56000.00
550-2180	300	LF	35.00	SIDE DRAIN PIPE, 18 IN, H 1-10	10500.00
550-4118	8	EA	415.00	FLARED END SECTION 18 IN, SIDE DRAIN	3320.00
550-4218	23	EA	480.00	FLARED END SECTION 18 IN, STORM DRAIN	11040.00
550-4224	15	EA	600.00	FLARED END SECTION 24 IN, STORM DRAIN	9000.00
550-4230	6	EA	750.00	FLARED END SECTION 30 IN, STORM DRAIN	4500.00
550-4236	1	EA	1000.00	FLARED END SECTION 36 IN, STORM DRAIN	1000.00
550-4242	2	EA	1800.00	FLARED END SECTION 42 IN, STORM DRAIN	3600.00
603-2018	225	SY	40.00	STN DUMPED RIP RAP, TP 1, 18 IN	9000.00
603-7000	225	SY	4.00	PLASTIC FILTER FABRIC	900.00
611-8050	3	EA	1020.49	ADJUST MANHOLE TO GRADE	3061.47
668-1100	130	EA	2500.00	CATCH BASIN, GP 1	325000.00
668-4300	8	EA	2100.00	STORM SEWER MANHOLE, TP 1	16800.00
Section Sub Total:					\$1,292,221.47

Total Estimated Cost: \$10,041,626.47

CONCEPT REPORT RIGHT OF WAY

COST ESTIMATE

Date: September 19, 2006
Project: STP-0004-00 (917) *Liberty* **P.I. Number:** 0004917
Existing/Required R/W: ± 100' / ± 200' **No. Parcels:** 82
Project Termini: US84 to Fort Stewart Base Entrance at 15th Street Extension
Project Description: Widening and enhancement of SR119 (Airport Road /15th Street Extension). The road goes from two lanes to four lanes with additional dedicated turn lanes at intersections and a divided median.

Land:

Residential-Lots: Estimated at \$17,500 per lot

Residential-Acreage: Ranging from \$10,000/AC to \$30,000/AC. Lower end where single-family potential, more rural in character and large size dictates. Higher end where multi-family potential exists, more urban in character or small size dictates.

Commercial/Industrial/O & I: Ranging from \$25,000/AC to \$75,000/AC. Lower end for strip zoning sites with long absorption periods, industrial or O & I (office-institutional) land, high intermittent wetlands. Higher end for PUD influence sites, more urban locations.

Intensive Commercial: \$150,000/AC. Good-quality sites at definite major intersections (points where US84 or SR196 intersect the project corridor).

Note: Unit rate values are applied to specific properties within the spreadsheet breaking down the project by parcel with individual notes and background information. This was done on an individual parcel basis as specific acquisition areas were provided by the plan designer for the various properties.

TOTAL: \$2,922,840

Improvements:

Buildings: \$480,713

Minor site improvements (paving, signs, etc.): \$113,500

TOTAL: \$ 594,213

Relocation:

Residential- 5 Parcels \$ 0

TOTAL: \$ 0

Damages:

Proximity- 9 Parcels \$125,000

Consequential-9 Parcels \$465,000

Cost to Cure- 9 Parcels \$390,000

TOTAL: \$ 980,000

Net Cost:	\$ 4,497,053
Plus Scheduling Contingency (55%):	\$ 2,473,379
Plus Admin./Court Cost (60% of 2 lines above):	\$ 4,182,259
Plus Inflation Factor (40% of 3 lines above):	<u>\$ 4,461,076</u>
	\$15,613,767

TOTAL COST: \$15,600,000 (R)

Notes: There are 5 apparent residential displacees (highlighted in blue on the spreadsheet) and no definite commercial displacees. The \$0 estimated relocation cost is attributable to GADOT directions not to include estimated moving costs and due to the fact that the study indicates that last resort housing will not be an issue due to significant available housing stock that meets program requirements.

55% adjustment for scheduling contingencies between date of estimate and project implementation. There are additional adjustments for unforeseen management and condemnation costs as well as for inflation.

Note that there are 3 numbered parcels on the attached spreadsheet that are already owned by Liberty County. These properties are highlighted in yellow on the spreadsheet and are not valued in the land cost section of the report. In the case of the State Patrol Post (PIN C09 009), estimated values for minor site improvements and for a cost to cure to restore parking are included as the leasehold interest of the State of Georgia will require the expenditure of funds to make the property "whole".

The notes for the various parcels on the spreadsheet outline distinctions between various damage types, cost to cures, etc. They also attempt to provide insight into the appraiser's review of the properties and the acquisition effect anticipated based on the preliminary plans.

Prepared by: J. J. Smiler, Moreland Altobelli Associates

Approved by: Harold R. Miller, GDOT R/W

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

District 5

Project Number: STP-0004-00(917)

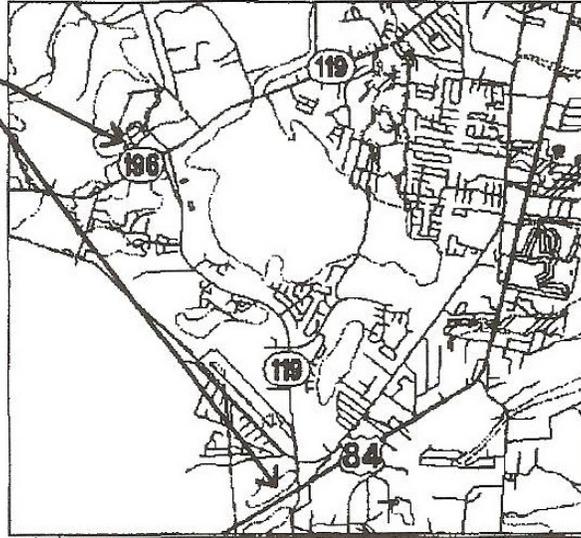
County: Liberty County

P. I. Number: 0004917

Federal Route Number: None

State Route Number: SR 119

PROJECT



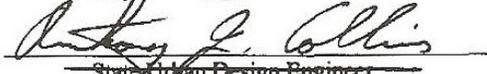
STATE ROUTE 119 from US 84 to STATE ROUTE 196

Recommendation for approval:

DATE 12/12/06


Project Manager

DATE 12/12/06


State Urban Design Engineer
DISTRICT PRECONSTRUCTION ENGINEER

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE _____

State Transportation Planning Administrator

DATE _____

State Financial Management Administrator

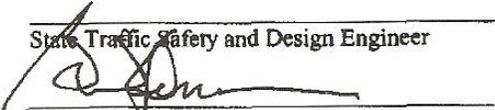
DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety and Design Engineer

DATE 12/12/06


District Engineer

DATE _____

Project Review Engineer

Introduction

Project STP-0004-00(917) consists of the widening of SR 119 in Liberty County. The project proposes to widen SR 119 from the intersection of US 84 to SR 196 on 200 feet of proposed right of way. SR 119 would be widened from an existing 2 lane facility to a 4 lane divided roadway. The southern terminus is the intersection of SR 119 and US 84. Within the project area, SR 119 is functionally classified as a minor urban arterial.

The length of the proposed project is approximately 3.30 miles. The typical section will consist of two – 12 foot lanes in each direction with a 24 foot raised grassed median. There will be a 17 foot outside shoulder with 2.5 feet of curb & gutter and a multi-use pathway on the west side. The east side shoulder will consist of 2.5 feet of curb & gutter and a 6 foot sidewalk for a total width of 13 foot.

The widening of SR 119 is identified and included in the Liberty County Transportation Improvement Plan, which was adopted in October, 2005.

Need and Purpose:

The need for this proposed project is to improve mobility in Liberty County and accommodate increasing travel demand in the area.

SR 119 is an important link between the two major thoroughfares in the area, US 84 and SR 196, both of which are multi-lane facilities. SR 119 provides a vital connection in the roadway network surrounding Hinesville and Fort Stewart. Traffic volumes on SR 119 are approaching congested conditions and are expected to more than double by the 2030 design year.

Recent collision data indicates that while the collision rates are slightly below the statewide average for Urban Minor Arterials, the injury rate along SR 119 is higher than average. SR 119 provides access to four separate school sites between US 84 and SR 196 and is a designated Liberty County bicycle route. The existing two-lane roadway does not provide accommodations for bicyclists or pedestrians near any of the schools.

The purpose of this project is to increase roadway capacity to accommodate rising volumes, improve roadway alignments and intersection configurations to improve safety, and to provide accommodations for all roadway users, including bicyclists and pedestrians.

Vehicular Demand

Recent counts taken in May 2005 showed daily volumes of roughly 9,100 vehicles per day. As a two-lane highway, SR 119 is currently operating at LOS D.

GDOT recently completed a regional transportation model for the Liberty County and Long

County area. Future estimates of the population and land uses were made in coordination with the Liberty Consolidated Planning Commission, Fort Stewart representatives, and GDOT officials. The area around SR 119 and near Fort Stewart is anticipated to grow significantly in the near future, with large residential and commercial uses.

Based on regional planning and the recently completed transportation model, 2030 volumes on SR 119 are estimated at 20,100 to 20,900 vehicles per day between US 84 and GA 196. As a two-lane highway without improvement, SR 119 would operate at a design year LOS E. Widening the roadway would improve operations to LOS B.

Safety

Accident data from 2001 to 2003 (the latest available) was collected by GDOT. During this period 103 collisions occurred along SR 119 between US 84 and the project's northern terminus at SR 196.

The statewide average accident rate for all urban minor arterials from 2001 to 2003 was 563 collisions per 100 million vehicle miles of travel. The average accident rate for SR 119 was slightly lower than the state average, at 493 collisions per 100 million vehicle miles. The injury rate on SR 119 averaged 394 per 100 million vehicle miles, which was higher than the statewide average of 218 per 100 million vehicle miles. From 2002 to 2003, the accident rate along SR 119 exceeded the statewide average while the injury rate exceeded the statewide average in 2001 and 2002.

Multi-modal considerations

There are four school sites along SR 119 between GA 84 and SR 196. SR 119 is designated by Liberty County as a bicycle route. The current configuration does not provide sidewalks for pedestrians or any type of bicycle accommodations. The proposed widening would provide a 10 foot wide multi-use pathway on the west side of SR 119 and 6-foot sidewalk on the east side of SR 119.

Other proposed projects in the area:

Project Construction Type	Project Number	P.I. Number	Limits	*Construction Year
Hinesville Bypass Construction	NH-026-3(56)	522570	SR 119 to US 84/SR 38	2009

* "Construction Year" is as per the Liberty County Transportation Study's Transportation Improvement Program.

Description of the proposed project:

Project Concept Report page 5
Project Number: STP-0004-00(917)
P. I. Number: 0004917
County: LIBERTY

Project STP-0004-00(917) Liberty County is the proposed widening of SR 119 from the intersection of US 84 through State Route 196. The project will accommodate anticipated residential and commercial growth. The proposed project length consists of Approx. 3.3 miles along State Route 119.

Is the project located in a Non-attainment area? Yes X No.

PDP Classification: Major X Minor
Federal Oversight: Full Oversight (), Exempt(X), State Funded (), or Other ()

Functional Classification: Minor Urban Arterial

U. S. Route Number(s): N/A State Route Number(s): SR 119

Traffic (AADT):

Current Year: (2006) 9,100 Design Year: (2030) 20,100 to 20,900

Existing design features:

- Typical Section: 2 – 12 foot lanes with a 10 foot grassed shoulders.
- Posted speed 45 mph (SR 119), 45 mph(SR 196) and 45 mph (US 84)
- Minimum radius for curve: 643'
- Maximum super-elevation rate for curve: 6.0%
- Maximum grade: 2 % - mainline, crossroads and drives.
- Width of right of way: Varies 100 to 120 foot (SR 119), 100 foot (SR 196), and 100 to 120 foot (US 84).
- Major structures: None (List all bridge structures including length, width, and sufficient rating).
- Major interchanges or intersections along the project:
 1. SR 119 and US 84 Intersection
 2. SR 119 and SR 196 Intersection
- Existing length of roadway segment and the beginning mile logs for each county segment. For new location projects, the existing length of roadway is zero (0).
3.30 Miles (SR 119)

Proposed Design Features:

- Proposed typical section(s):
 - The proposed typical section will continue the existing: 2 – 12 foot lanes in each direction divided by a 24 foot raised median with a 17 foot shoulder including 2.5 foot curb & gutter and a 10 foot multi-use path on the west side and a 13 foot shoulder including 2.5 foot curb & gutter and a 6 foot sidewalk on the east side.
- Proposed Design Speed Mainline 45 mph
- Proposed Maximum grade Mainline 2 %
- Maximum grade allowable 6 %.
- Proposed Maximum grade Side Street 2 %
- Maximum grade allowable 15 %.

- Proposed Maximum grade driveway 6 %
- Proposed Minimum radius for curve 782'
- Minimum radius allowable 643'
- Proposed Maximum super-elevation rate for curve: 6.0%
- Proposed right of way:
 - Width: **160 to 200 foot (SR 119).**
 - Easements: Temporary (), Permanent (X), Utility (X), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 70 Number of displacements:
 - Business: 0
 - Residences: 4
 - Mobile homes: 0
 - Other: 0
- Structures:
 - Bridges - **NONE**
 - Retaining walls - **NONE**
 - Box Culvert - **NONE**
- Major intersections and interchanges.
 1. **US 84 Intersection at southern project Terminus.**
 2. **SR 196 Intersection at northern project Terminus.**
- Traffic control during construction: SR 119 will continue to carry traffic during construction to widen it to a multi-lane facility.
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

- Design Variances; **NONE**
- Environmental concerns:
 - Wetland Impacts – Approximately 3.7 Acres of wetland impacts. Section 404 Jurisdictional Wetlands.
 - Cultural Resources – Cultural resources survey pursuant to Section 106 of the National Historic Preservation Act of 1966.

- Endangered species – Threatened and endangered species survey pursuant to the Endangered Species Act of 1963.
- Noise – A Noise Impact Assessment will be made in compliance with 23 CFR Part 772 of the FHWA's guidelines for the assessment of highway generated noise.
- COE Individual Permit Required

Level of Environmental Analysis:

- Are Time Savings Procedures appropriate? Yes (), No (X),
- Categorical exclusion (),
- Environmental Assessment/Finding of No Significant Impact (FONSI) (X), or
- Environmental Impact Statement (EIS) ().

Utility Involvements:

- Georgia Power Company – Distribution
- Coastal Communications
- Comcast
- Liberty county Water & Sewer

Project responsibilities:

- Design, LIBERTY COUNTY
- Right of Way Acquisition, GA DOT
- Relocation of Utilities, LIBERTY COUNTY
- Letting to contract, GA DOT
- Supervision of construction, GA DOT
- Providing material pits, CONTRACTOR
- Providing detours. CONTRACTOR

Coordination

1. Concept meeting was held on June 16, 2006.
2. P.A.R. meeting will be required.
3. Public meeting(s) will be required.
4. Local government comments.
5. Other projects in the area. See Need and Purpose

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 12 Months.
- Time to complete preliminary construction plans: 6 Months.
- Time to complete right of way plans: 4 Months.
- Time to complete the Section 404 Permit: 9 Months.
- Time to complete final construction plans: 6 Months.
- Time to complete purchase of right of way: 12 Months.
- List other major items that will affect the project schedule: N/A Months.

Project Concept Report page 8
Project Number: STP-0004-00(917)
P. I. Number: 0004917
County: LIBERTY

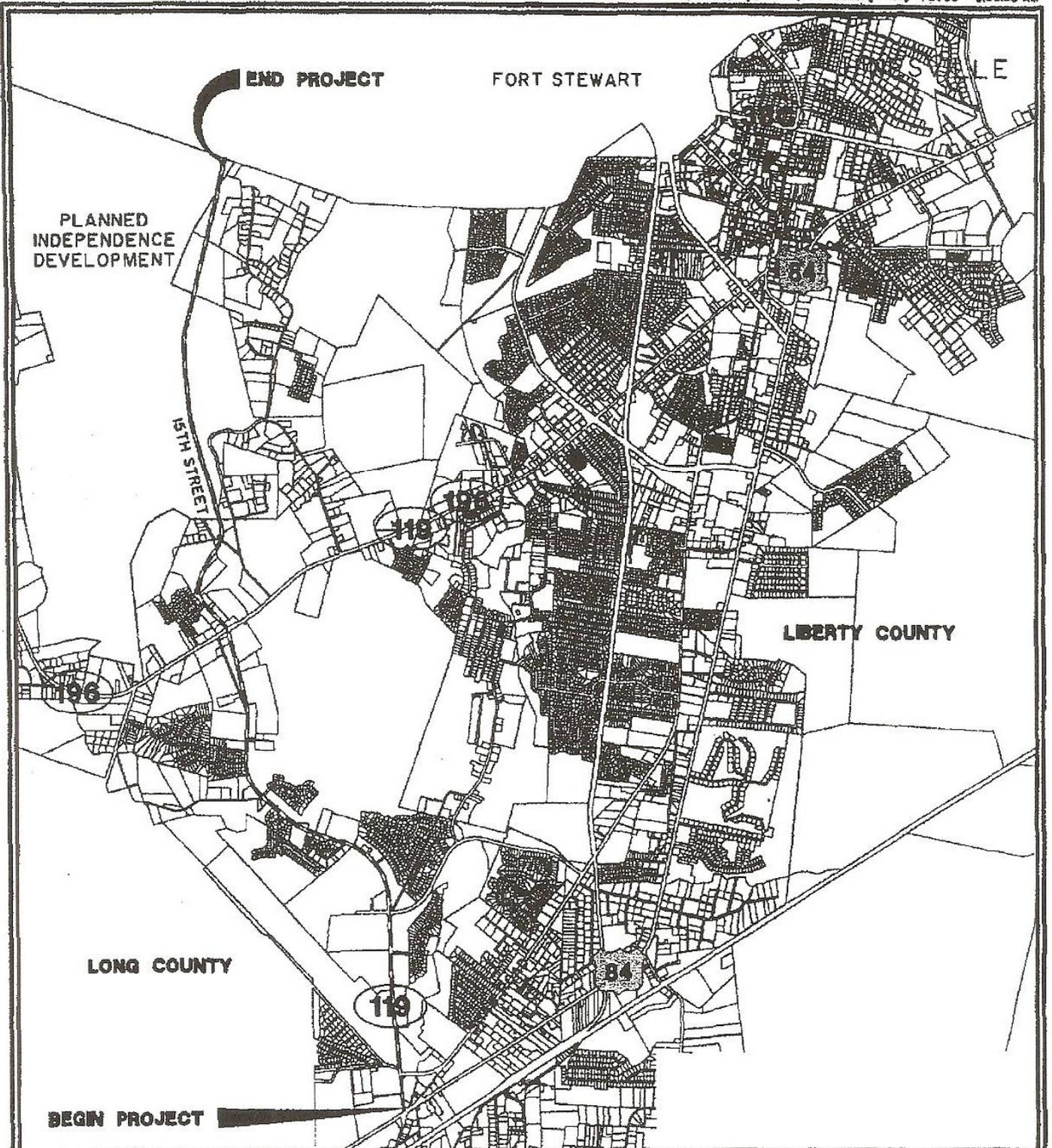
Other alternates considered: NONE

Comments:

- Project Plans will be completed in English units.

Attachments:

1. Typical Sections
2. Initial Cost Estimate
3. Traffic Analysis
4. Concept Team Meeting Minutes
5. Initial Concept Meeting Minutes
6. Final Concept Meeting Minutes
7. Right of Way Cost Estimate



LIBERTY COUNTY
SR 119 WIDENING & RECONSTRUCTION

THOMAS & HUTTON ENGINEERING CO.
 935 HOUSTON NORTHCUTT BOULEVARD
 MOUNT PLEASANT S.C. 29464
 (843)849-0200

FIGURE I: VICINITY MAP

SR 119 WIDENING

TRAFFIC ANALYSIS

LIBERTY COUNTY, GA

October 2005

Prepared for:
Liberty County, GDOT

J-17490.402

SR 119 and 15th Street Widening – Traffic Analysis

LOCATION

SR 119 is planned to be widened from a two-lane roadway to a multi-lane facility between US 84 and the Fort Stewart Gate 7. The proposed project is located in Liberty County, within the town limits of Walthourville and Hinesville.

Widening along SR 119 is planned to occur between US 84 and SR 196. North of SR 196, SR 119 is re-designated as 15th Street, which leads to Fort Stewart's Gate 7. This section of 15th Street is also planned to be widened. The location is shown in Figure 1.

ROADWAY CONDITIONS

SR 119, also known as Airport Road, is currently a two-lane facility. It connects US 84 near Walthourville to GA 196 and continues as 15th Street up to Gate 7 of Fort Stewart. SR 119 between US 84 and GA 196 is classified as an Urban Minor Arterial. Between GA 186 and Fort Stewart, it is currently classified as a Local Road.

Between US 84 and SR 196, land uses along SR 119 vary. Near US 84, SR 119 provides access to the Liberty County airport. North of the airport, SR 119 serves a mix of residential, commercial, and institutional uses. Several schools are located along SR 119.

North of SR 196, land along 15th Street is relatively undeveloped. The area close to SR 196 has some small commercial and residential areas. An elementary school is also served by 15th Street. The undeveloped area between SR 196 and Fort Stewart, however, is planned to be developed in the near future.

CURRENT TRAFFIC VOLUMES

GDOT count station 147 is located on SR 119 near the Liberty County airport (MP 12.45). Count station 121 is located on SR 196 east of its intersection with SR 119 (MP 15.69).

As part of this study, daily counts were taken in May of 2005. Three days of data were obtained using machine tube counters. Counts were taken at the approximate locations of the GDOT count stations. The average daily volumes taken in May of 2005, along with recent GDOT count station data, are shown in Table 1.

Table 1. Recent counts and GDOT historical data

Year	SR 119 (vehicles per day)	SR 196 (vehicles per day)
Counts taken May 2005		
May 2005	9,110	14,840
GDOT Count Stations (147 and 121)		
2004	8,290	15,820
2003	8,140	14,890

Peak hour volumes along SR 119 showed approximately 710 vehicles per hour in the morning peak, with approximately 60% of the traffic headed south. In the afternoon, volumes were slightly higher, at approximately 775 vehicles per hour, with a roughly even directional split.

Daily volumes taken show increases along SR 119 between US 84 and SR 196, a continuing trend based on recent GDOT count station data. Counts taken in 2005 on SR 196 were slightly lower than in 2004, and at roughly the same levels as in 2003.

According to a recent traffic study done for Ft. Stewart, Gate 7 currently serves approximately 5,700 vehicles per day.

SAFETY ANALYSIS

According to GDOT collision records, there were 103 reported collisions along SR 119 (between US 84 and GA 196) from 2001-2003. Collision rates for each year, along with the Statewide Average collision rates for Urban Minor Arterials, are shown in Table 2.

Table 2. Collision Rates (in collisions, or injuries, per 100 million vehicle miles)

Roadway	2001		2002		2003		Overall (01-03)	
	Accident Rate	Injury Rate	Accident Rate	Injury Rate	Accident Rate	Injury Rate	Accident Rate	Injury Rate
SR 119	397	346	615	641	466	194	493	394
Statewide Average	550	218	568	218	572	218	563	218

As shown, the collision rate along SR 119 exceeded the statewide average for Urban Minor Arterials in 2002. The injury rate exceeded the statewide average in 2001 and 2002. Averaged over the three year period, the collision rate was slightly lower than the average, but the injury rate was higher. There were no fatal collisions along the route in 2001, 2002, or 2003.

2005 CAPACITY ANALYSES

Turning movements were counted at all of the major intersections along the route in May 2005. Counts were taken on a weekday from 7 AM to 9 AM and from 4 PM to 6 PM. Peak hour turning movement counts are shown in Figure 2.

Based on the counts taken in May 2005, the roadway and intersections are all functioning at relatively high Levels of Service. Table 3 shows the Levels of Service for each intersection. Overall LOS is shown for signalized intersections; LOS at unsignalized intersections represents the side street operational conditions.

Table 3. 2005 Levels of Service

INTERSECTION	AM PEAK		PM PEAK	
	LOS	DELAY (SEC)	LOS	DELAY (SEC)
US 84 and SR 119 (signalized)	A	8	A	7
SR 119 and Shaw Drive (Shaw approach)	B	11	B	13
SR 119 and Hardman Road (Hardman approach)	B	12	B	14
SR 119 and Barry McCaffrey/Industrial Drive (McCaffrey approach)	A	9	A	9
SR 119 and Stonehenge Drive (Stonehenge approach)	B	12	B	12
SR 119 and Deveraux/Westchester Drive (Deveraux approach)	C	16	C	16
SR 119 and Waterfield Drive (Waterfield approach)	C	17	C	15
SR 119 and GA 196 (signalized)	A	6	A	7
SR 119 and Parkland Drive (Parkland approach)	B	12	B	12

PLANNED DEVELOPMENT

A large mixed-use development, Independence, is planned to be built with approximately 10,800 residential dwelling units and 2 million square feet of commercial space. The Independence development is planned to provide a diverse mixture of residential and commercial uses to suit the current and projected needs of Hinesville and Fort Stewart. The primary access to Independence will be on 15th Street.

A secondary access to the development is planned on Dairy Road, but the majority of Independence will use 15th Street. A town center area, the main amenity center, and all of the commercial uses are planned along 15th Street.

2030 PROJECTED VOLUMES

GDOT recently completed a regional transportation model for the Liberty County and Long County area. Future estimates of the population and land uses were made in coordination with Liberty County officials, Fort Stewart representatives, and GDOT officials.

Several assumptions were made in developing the future population forecasts. A main assumption made was the population would continue to increase, not only from local residents and births, but also from in-migration from other parts of the country. Another assumption was the continued use and expansion of Fort Stewart. With apparent base closures and relocations globally, Fort Stewart appears to be not affected by any of the future developments within the military.

Regional planners, in association with GDOT and Ft. Stewart, agreed upon reasonable assumptions regarding the rate of development in planned area developments, such as Independence. The assumptions made are fairly conservative, and provide a framework in which population forecasts can be constructed. In time, these forecasts may actually prove to be low.

Based on the transportation model output, the 2030 projected volumes for SR 119 are approximately 20,100 to 20,900 vehicles per day (vpd) along the section between US 84 and GA 196. This represents an increase of approximately 125% over the existing daily volumes. North of GA 196, volumes on 15th Street are projected to be approximately 13,500 vehicles per day, which is also an increase of approximately 125% over the existing estimated volumes of approximately 6,000 vpd.

In contrast, volumes on GA 196 near the SR 119 intersection are expected to rise to approximately 18,000 vpd in 2030 (closer to Hinesville volumes on SR 196 are expected to be significantly higher), an approximately 25% increase. Volumes on GA 84 near the SR 119 intersection are expected to be approximately 28,000 vpd, a 75% increase over the current daily volume of approximately 16,000 vpd.

To estimate the 2030 volumes at specific intersections, as a general assumption, the peak hour counts that were taken in 2005 are increased by the amounts mentioned above. The estimated volumes are shown in Figure 3.

Using the assumed 2030 volumes, capacity analyses were completed with and without the proposed widening improvements. Table 4 shows the resulting operational conditions if SR 119 were to remain in its current configuration.

Table 4. 2030 Levels of Service without roadway improvements

INTERSECTION	AM PEAK		PM PEAK	
	LOS	DELAY (SEC)	LOS	DELAY (SEC)
US 84 and SR 119 (signalized)	B	12	B	19
SR 119 and Shaw Drive (Shaw approach)	D	29	F	171
SR 119 and Hardman Road (Hardman approach)	F	110	F	438
SR 119 and Barry McCaffrey/Industrial Drive (McCaffrey approach)	C	21	E	49
SR 119 and Stonehenge Drive (Stonehenge approach)	F	76	D	31
SR 119 and Deveraux/Westchester Drive (Deveraux approach)	F	345	F	212
SR 119 and Waterfield Drive (Waterfield approach)	F	516	F	187
SR 119 and GA 196 (signalized)	B	19	B	19
SR 119 and Parkland Drive (Parkland approach)	D	27	D	26

As expected, traffic growth has the potential to cause many of the unsignalized approaches to the major roadway to operate poorly. The existing signals, which currently have auxiliary turn lanes on all approaches, could continue to operate at reasonable levels.

Assuming a general widening of SR 119 and 15th Street to a multi-lane facility, the 2030 intersection Levels of Service would be as shown in Table 5 (assuming the same volumes used in Table 4).

VALUE ENGINEERING PROCESS

This report summarizes the analysis and conclusions by the PBS&J Value Engineering team as they performed a VE Study during the period of September 28 through October 1, 2009 in Atlanta, Georgia, for the Georgia Department of Transportation.

INTRODUCTION

The Value Engineering Study team and its leadership were provided by PBS&J. This VE Team consisted of the following:

Les M. Thomas, PE, CVS-Life	Team Leader
Luke Clarke, PE, AVS	Senior Highway Design Engineer
Kevin Martin, Esq., AVS	Highway Construction Specialist
Randy S. Thomas, CVS	Assistant Team Leader

The Value Engineering Team followed the Seven Step Value Engineering job plan as promulgated by SAVE International. This Seven Step job plan includes the following:

- **Investigation/Information Phase** – during this phase of the VE Team’s work, the team received a briefing from the Georgia Department of Transportation (GDOT) staff and Thomas & Hutton Engineering Company. This briefing included discussions of the design intent behind the project, the cost concerns, and the physical project limitations. In the working session that followed, the VE Team developed cost models from the cost data provided by the designers and familiarized themselves with the construction drawings and other data that was available to the team. Some of the representative project information (concept report, cost estimate, and special provisions) may be found in the tabbed section of this report entitled *Project Description*. Following this current narrative the reader will also find a cost model done in the Pareto fashion, i.e., identifying the highest costs down to the lowest costs for the larger construction cost elements. This cost model, developed by the VE Team, was used by the VE Team to help focus their week of work. The headings on the Pareto Chart also were used as headings for creative phase activities.
- **Analysis Phase** – during this phase the VE Team determined the “**Functions**” of the project. This was accomplished by reviewing the project from the simplest format in asking the questions of “What is the project supposed to do?”, and “How is it supposed to accomplish this purpose? In the Value Engineering vernacular, the answers to these questions are cast in the form of active verbs and measurable nouns. These verb/noun pairs form the basis of the function analysis which distinguishes a Value Engineering effort from a potentially damaging cost cutting exercise. A FAST diagram was prepared highlighting the projects required functions.

- The important functions of the project were identified as follows:
 - **Project Objective/Goals**
 - **Improve operational conditions**
 - **Improve safety**
 - **Reduce injury accidents**
 - **Improve access**
 - **Project Basic Functions**
 - **Improve traffic access**
 - **Meet standards**
 - **Improve sight distance**
- **Speculation Phase** - The VE team performed a brainstorming session to identify ideas that might help meet the project objectives:
 - **Eliminate non-functional work**
 - **Modify alignment**
 - **Reduce number of residential relocations**
 - **Reduce width of sidewalks**
 - **Reduce raised median width**

This brainstorming session initially identified numerous ideas that were then evaluated in the Judgment phase. The reader will find the creative worksheets enclosed. These same work sheets were also used to record the results of the Judgment/Evaluation Phase.

- **Evaluation Phase** – Once the VE Team identified the creative ideas, it was necessary to decide which alternatives should be carried forward. This is the work of the Evaluation or Judgment Phase. The VE Team reflected back on the project constraints and objectives shared with the team by the owner’s representatives, in the kick-off meeting on the first day of the workshop. From that guidance, the team selected ideas that they believed would improve the project by a vote process.

Following that selection process, the VE Team used the following values as measures of whether or not an alternative had enough merit to be carried forward in the VE process:

- Construction cost savings
- Improve value
- Maintainability
- Ability to implement the idea

- General acceptability of the alternatives
- Constructability
- Scheduling delays

Based on these criteria, the VE Team evaluated the alternatives and graded them from 5 (Excellent) down to 1 (Poor). Other notes about the alternatives are annotated at the bottom of the enclosed creative and evaluation sheets.

- **Development Phase** – During this phase, the VE Team developed each of the selected design alternatives whose rating was “4” or “5” because of time constraints. If time permitted, the team will develop additional recommendations. This effort included a detailed explanation of the idea with sketches as appropriate to clarify the idea from the original concept, advantages and disadvantages, a technical explanation and an estimation of the cost and resultant savings if implemented. (see the tabbed section – Study Results)
- **Recommendation Phase** – During this phase the VE Team reviews the alternative ideas to confirm which ones are appropriate for the project, have an opportunity for success and which will improve the value of the project if implemented.
- **Presentation Phase** – As noted earlier, the team made an informal “out-briefing” on the last day of the workshop, designed to inform the Owners and the Designers of the initial findings of the VE Study. This written report is intended to formalize those findings.

VALUE ENGINEERING STUDY AGENDA
for
Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR119/Airport Road from US 84 to SR 196 in Hinesville
Liberty County

September 28-October 21, 2009

Pre-Workshop Activities

VE Team Leader organizes study, coordinates with the Owner and Designer the project objectives and materials necessary. The VE Team receives and reviews all project documents. The team develops a Pareto Chart and/or Cost Model for the project.

Day One

9:00-10:30 Design Team Presentation (Information Phase)

- Introduction of participants, owner, designer, and VE team members
- Presentation of the project by the design engineer including:
 - History and background
 - Design Criteria and Constraints
 - Special “U” turn requirements
 - Special needs (schools, businesses, etc.)
 - Sidewalks, bicycle lanes, and or multi-use trails
 - Historical Property protection
 - Current Construction Completion Schedule
 - Project Cost Estimate and Budget Constraints
- Owner Presentation – special requirements, definition of life cycle period and interest rate for life cycle costs
- Review VE Pareto Chart/Cost Model
- Discussion, questions and answers
- Overview of the VE Process and Agenda – Workshop goals & project goals

10:30-12:00 VE Team reviews project (Information Phase)

- Review design team’s presentation
- Review agenda and goals of the study
- Visit project site if time permits

1:00-2:30 Function Analysis Phase

- Analyze Cost Model – Pareto
- Identify basic and secondary functions
- Complete Function Matrix/FAST Diagram

2:30-5:00 Creative Phase

- Brainstorming of alternative ideas

Day Two

8:00-10:00 Evaluation Phase

- Establish criteria for evaluation
- Rank ideas
- Identify “best” ideas for development
- Identify those ideas that will become Design Suggestions
- Develop a cost/worth analysis
- Identify a “champion” for each idea to be developed

10:00-5:00 Development Phase

- Develop alternative ideas design suggestions with assessment of original design and write up new alternatives including:
 - Opportunities & risks
 - Illustrations
 - Calculations
 - Cost worksheets
 - Life cycle cost analysis

Day Three

8:00-5:00 Development Phase

- Continue developing Alternative Ideas
- Continue developing Design Suggestions
- Prepare for presentation to Owners and Designers

Day Four

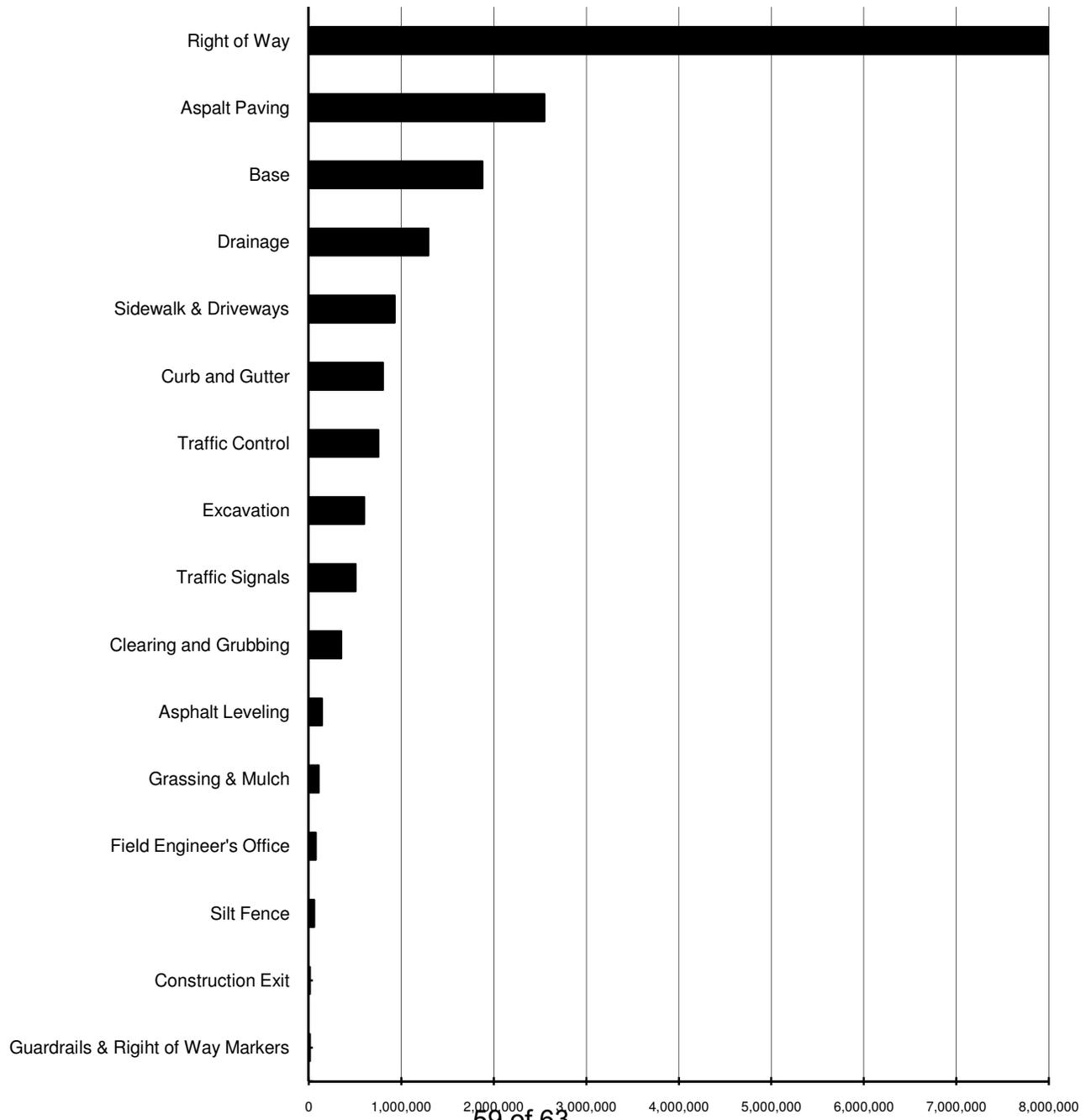
8:00-9:00 Prepare Presentation

9:00-10:00 VE Team Presentation

PARETO CHART - COST HISTOGRAM



PROJECT: Georgia Department of Transportation STP00-0004-00(917) - P.I. No. 0004917 Widening SR 119/Airport Road from US 84 to SR 196 in Hinesville Liberty County			
PROJECT ELEMENT	COST	PERCENT	CUM. PERCENT
Right of Way	7,993,607	44.32%	44.32%
Asphalt Paving	2,544,400	14.11%	58.43%
Base	1,875,000	10.40%	68.83%
Drainage	1,292,221	7.16%	75.99%
Sidewalk & Driveways	927,600	5.14%	81.13%
Curb and Gutter	800,880	4.44%	85.58%
Traffic Control	750,000	4.16%	89.73%
Excavation	597,375	3.31%	93.05%
Traffic Signals	504,800	2.80%	95.85%
Clearing and Grubbing	350,000	1.94%	97.79%
Asphalt Leveling	140,000	0.78%	98.56%
Grassing & Mulch	107,100	0.59%	99.16%
Field Engineer's Office	75,000	0.42%	99.57%
Silt Fence	56,000	0.31%	99.88%
Construction Exit	12,000	0.07%	99.95%
Guardrails & Right of Way Markers	9,250	0.05%	100.00%
Construction Cost including ROW & Utilites	\$ 18,035,233		
Construction Cost less ROW & Utilites	\$ 10,041,626		
E & C Rate @10%	\$ 1,004,163		
Total Construction Costs	\$ 11,045,789		
Right-of-Way	\$ 7,993,607		
Utilities Reimbursement	\$ -		
TOTAL	\$ 19,039,396		



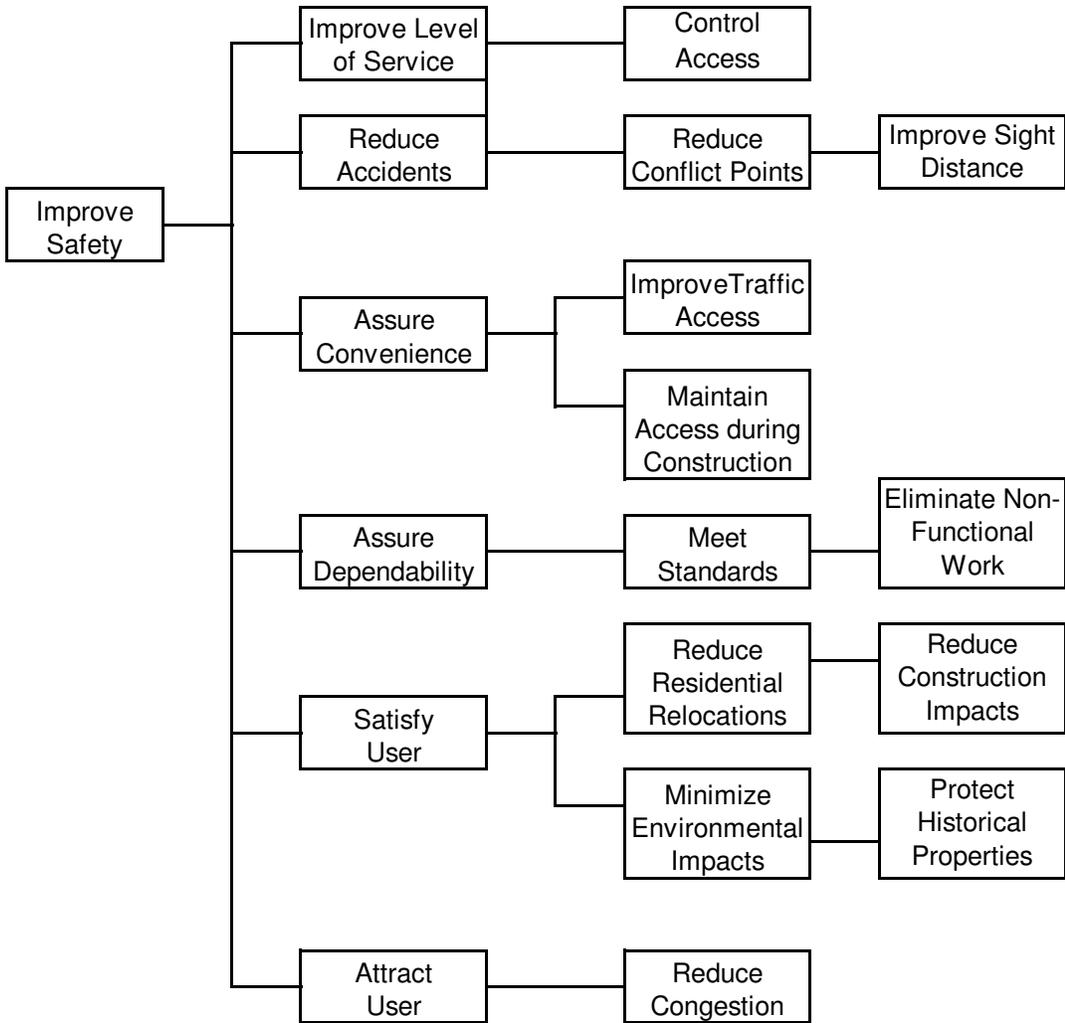
CUSTOMER FUNCTION/TASK DIAGRAM

Project No. STP00-0004-00(917)

P.I. No. 0004917

Liberty County

Widening SR 119/Airport Road from US 84 to
SR 196 in Hinesville



DESIGNER PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation		September 28, 2009		
STP00-0004-00(917) - P.I. No. 0004917				
Liberty County				
NAME	ORGANIZATION & TITLE		E-MAIL	PHONE
Lisa Myers		GDOT - Engineering Services	lmyers@dot.ga.gov	404-631-1770
James K. Magnus		GDOT-Construction	jmagnus@dot.ga.gov	404-631-1971
Matt Sanders		GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
Ron Wishon		GDOT-Engineering Services	rwishon@dot.ga.gov	404-631-1753
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Luke Clarke, PE, AVS		PBS&J	lwclarke@pbsj.com	205-746-4615
Kevin Martin, Esq., AVS		PBS&J	klmartin@pbsj.com	205-969-3776
Randy Thomas, CVS		PBS&J	rsthomas@pbsj.com	770-883-1545
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Nabil Raad		GDOT	nraad@dot.ga.gov	404-635-8126
Andrew Heath		GDOT	aheath@dot.ga.gov	404-631-1750
Keith Stewart		GDOT-Road Design		912-427-5863
Bryan Czech		GDOT-Area Engineering		912-654-2940
Brian Ray		GDOT		912-654-2940
Dennis Odom		GDOT	dodom@dot.ga.gov	912-427-5716
Scott Burns		Thomas & Hutton Engineers	burns.s@thomas-hutton.com	912-721-4078

VE PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation STP00-0004-00(917) - P.I. No. 0004917		October 1, 2009	
Liberty County			
NAME	ORGANIZATION & TITLE	E-MAIL	PHONE
Lisa Myers	 GDOT - Engineering Services	lmyers@dot.ga.gov	404-631-1770
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Dennis Odom	 GDOT	dodom@dot.ga.gov	912-427-5716
Scott Burns	 Thomas & Hutton Engineers	burns.s@thomas-hutton.com	912-721-4078

CREATIVE IDEA LISTING



**PROJECT: Georgia Department of Transportation
STP00-0004-00(917) – P.I. No. 0004917
Widening SR 119/Airport Road from US 84 to SR 196 in
Hinesville, Liberty County**

SHEET NO.: 1 of 1

NO.	IDEA DESCRIPTION	RATING
	ROADWAY (RD)	
RD-1	Construct a 5 lane section	5
RD-2	Use 12' for outside lane and 11' for the inside lane	4
RD-3	Use a 20' raised median vs. a 24' raised median	4
RD-4	Use a 5' sidewalk in-lieu of a 6'	4
RD-5	Use 16' and 12' shoulders in lieu of 17' and 13' respectively	2
RD-6	Construct 5' sidewalk in-lieu of 10' multi-use trail	1
RD-7	Modify alignment from Sta. 199+/- to Sta.210+/- to reduce residential relocations	5
RD-8	Construct a Hybrid Section	3
RD-9	Modify Cross Drains @ Sta. 107+55 and Sta. 120+20	3
RD-10	Eliminate parallel drain lines, reverse grade drains at various locations	3
RD-11	Re-align Hardman Road	DS
RD-12	Use 6" Type 7 Curb and Gutter	2
RD-13	Delay signalization of Technology Drive	3
RD-14	Provide Access to airport	DS
RD-15	Outfall individual inlets in wetland areas	4
RD-16	Add cross walks for school and churches	ABD

**Rating: 1→2 = Not to be Developed; 3 = Varying Degrees of Development Potential;
4→5 = Most likely to be Developed; DS = Design Suggestion; ABD = Already Being Done; OB= Observation**