



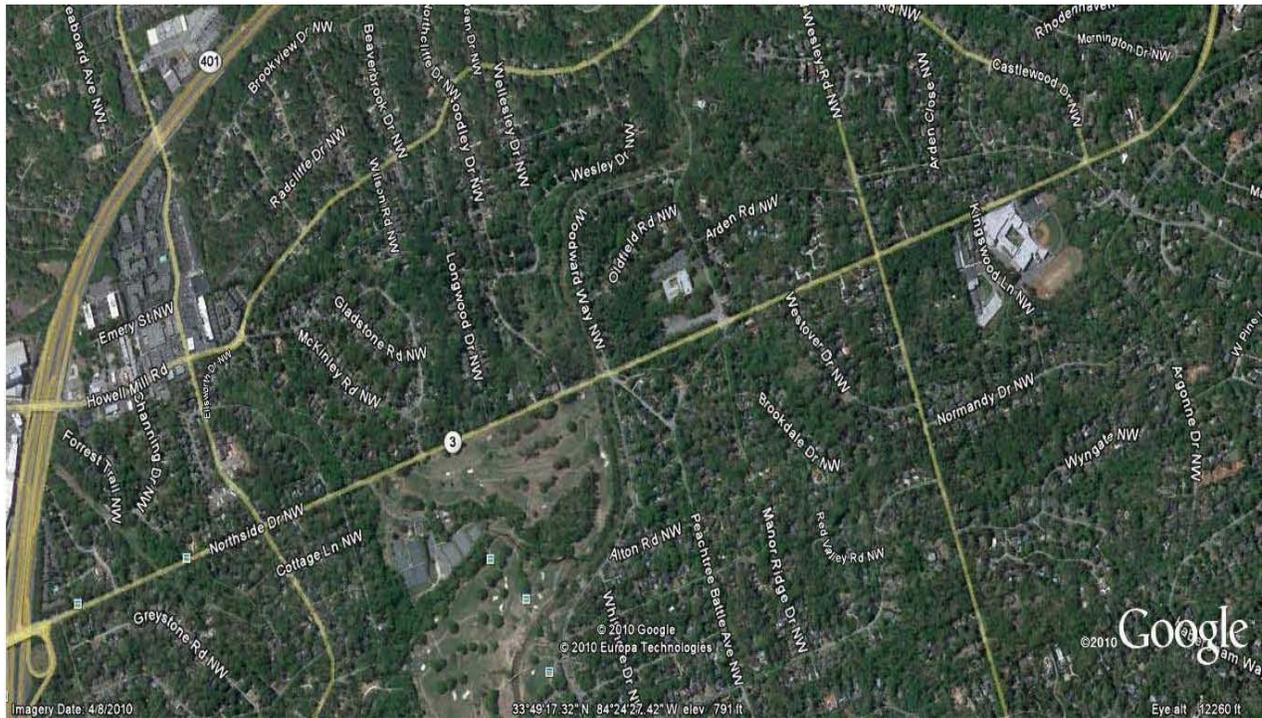
GEORGIA DEPARTMENT OF TRANSPORTATION

Northside Drive Safety Improvements

Fulton County

STP00-0004-00(166) – P.I. No. 0004166

VALUE ENGINEERING REPORT



JANUARY 2011

Submitted by:





January, 2011

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

RE: Value Engineering Report
STP00-0004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County

Dear Ms. Myers:

Please find enclosed two (2) hard copies and one (1) CD of our Value Engineering Report for the proposed safety improvements to Northside Drive from the I-75 intersection to just north of the Northside Drive/Northside Parkway intersection. Using the Value Engineering “Job Plan” – Investigation, Analysis (*Function*), Speculation, Evaluation & Development, the VE Team identified:

Seven (7) Alternatives recommended for improving the project value.

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.

Please contact me at 678-677-6420 should you have any questions regarding this submittal.

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

Yours truly,

A handwritten signature in black ink that reads "Les M. Thomas". The signature is written in a cursive, slightly stylized font.

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

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The subject of this Value Engineering study is the improvements proposed for Northside Drive from I-75 to just north of the Northside Drive/Northside Parkway intersection. This project is being done in conjunction with the City of Atlanta. Project documents were designed by Jacobs and Atlanta Services Group, Inc.

1.2 PROJECT DESCRIPTION

The proposed project consists of roadway and waterline improvements along Northside Drive/SR3/US41 from I-75 to just north of the Northside Drive/Northside Parkway intersection. The roadway portion of the project from I-75 to Collier Road includes converting the existing reversible lane to a southbound through lane. Also, a right turn lane is proposed for the existing northbound lane to the Collier Road eastbound. From Collier Road north, the work includes converting the reversible lane to a two-way left turn lane until it connects to the existing 4 lane section.

Also, the existing signals will be upgraded to provide for pedestrian access as well as adding a left turn lane from southbound Northside to Collier Road eastbound. In addition, new curb and sidewalks will be constructed on the westbound side from I-75 to Wesley Drive. Sidewalks will also be constructed on the eastbound side from Collier Road to the Tennis Court drive where a PATH trail will be built on the Bobby Jones Golf Course. The entire roadway will be milled 2.5" and overlaid 1.5". The waterline portion of the project includes replacing the existing 20" water main with 36" transmission line along with a 12" distribution line. In addition a new sanitary sewer line will be installed along the project. The proposed project is 2.4 miles and located entirely in Fulton County.

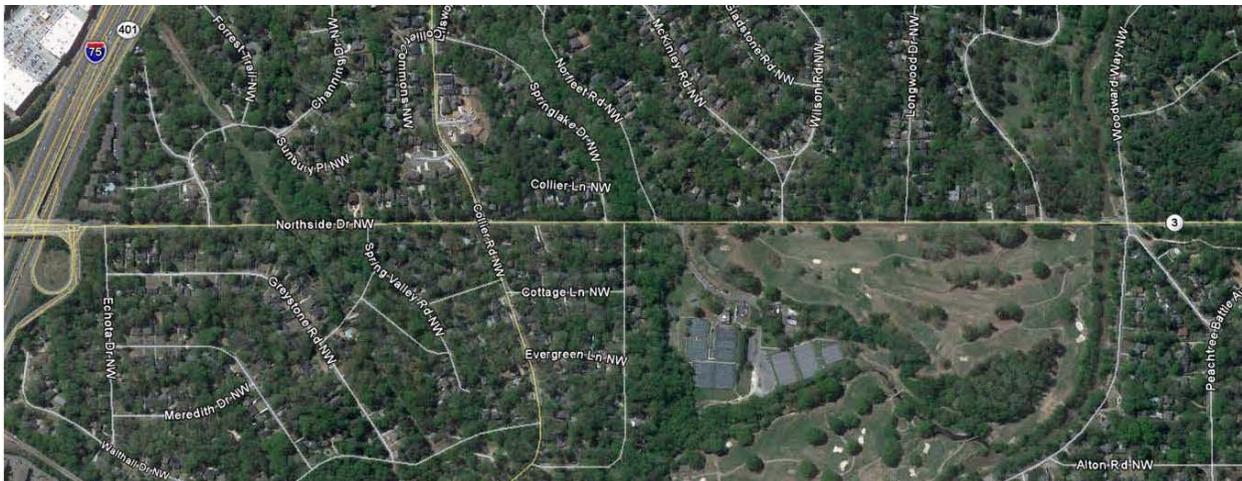


Figure 1-1: SR3/Northside Dr. from I-75 to Woodward Way West

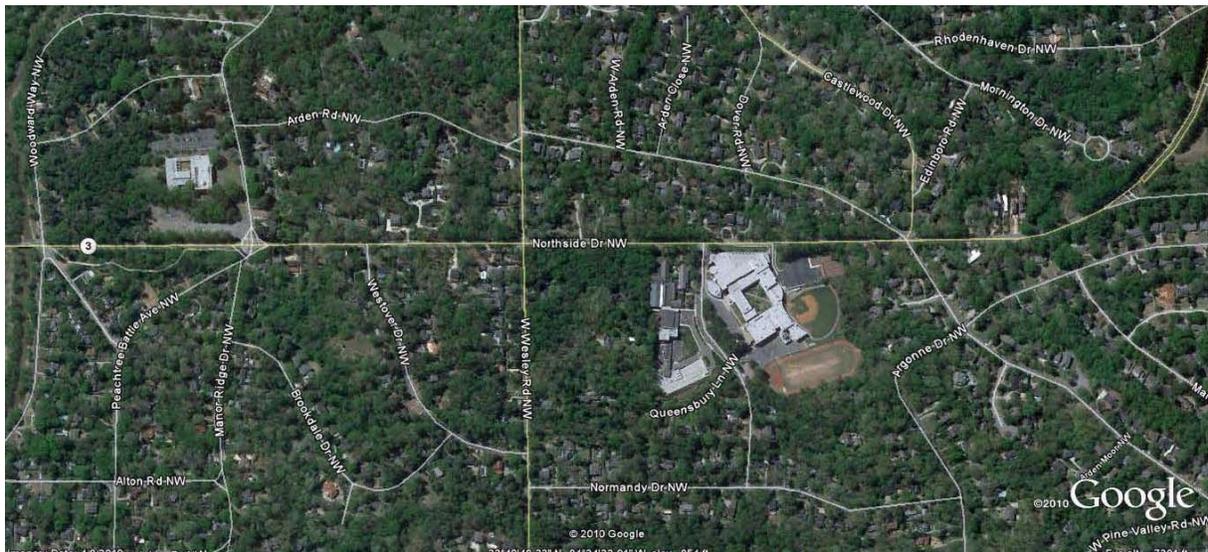


Figure 1-2: SR-3/Northside Dr. from Woodward Way West to just north of the Northside Drive/Northside Parkway intersection

The Value Engineering (VE) team followed the seven step Value Engineering job plan as promulgated by SAVE International. Refer to Section 4.2 of this report for additional information on the VE process. The seven step Job Plan includes the following:

Information Phase – during this phase of the VE Team’s work, the team received a briefing from the GDOT, the City of Atlanta, and the Atlanta Services Group, Inc. 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 made available to the team. The VE Team thence visited the project site.

Function Analysis Phase – during this phase the VE Team determined the “**Functions**” of the project. This was accompanied by reviewing the project by 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 project’s required functions.

Speculation/Creative Phase – The VE Team performed a brainstorming session to identify ideas that might help meet the project objectives. These ideas fell into the following major headings:

- Converting reversible lane section to a two-way left turn lane
- Adding sidewalks to the project
- Milling/replacing asphalt concrete
- Replacing a 20” water main with a 36” transmission pipe
- Adding a 12” pipe for water distribution

The brainstorming session identified seventeen (28) ideas, which are as shown below.

CREATIVE IDEA LISTING

PROJECT: Georgia Department of Transportation STP00-00004-00(166)) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County		SHEET NO.: 1 of 2
NO.	IDEA DESCRIPTION	RATING
ROADWAY (RD)		
RD-1	Use profile milling from 2 ½" to 0" in-lieu of full depth (2.5") milling	5
RD-2	Profile milling from 2 ½"-1 ½"	1
RD-3	Meander the sidewalk to avoid utilities	5
RD-4	Locate sidewalk adjacent to curb	2
RD-5	Use 10' shoulder	2
RD-6	Locate retaining wall to edge of shoulder	2
RD-7	Delete milling from beginning of project to Sta. 157+00	4
RD-8	Use sealer in-lieu of mill and inlay	1
RD-9	Re-install stone headers to new grade	1
RD-10	Minimize milling and inlay and adjust curbing to fit	1
RD-11	Delete sidewalks and construct new four lane road	1
RD-12	Connect sidewalk on east side to PATH trail	ABD
RD-13	End roadway project at Sta. 229+00	5
RD-14	Delete sod strip and add pavement to create 11' lanes	1
RD-15	Use ≤ 2" sod strip	1
RD-16	Shift roadway west at Collier to avoid power poles	2
RD-17	Shorten turn lane/taper at Collier to avoid power poles	2
RD-18	Lessen restrictive lane closures during the period between the Thanksgiving and Christmas holidays	4
RD-19	Use 8' shoulder, minimize or delete sidewalk, use 11' outside lane and two-way left turn lane	5
RD-20	Construct 3 -11' lanes from beginning of project to Collier	5
RD-21	Widen road 3' in conjunction with the construction of the water mains	5
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		

Evaluation Phase – During this phase, the VE Team determines which of the creative ideas offer the best opportunity to improve the value of the project for further development. The first step is to determine the criteria that the ideas should be evaluated against. The VE Team reflected back on the project constraints and objectives shared with the team by the Owner’s representatives and the design team members and listed the following:

- First Costs
- Impact on existing utilities
- Impact on traffic congestion
- Impact on wetlands
- Impact on existing schools
- Operational and Maintenance Costs

Development Phase – During this phase, the VE Team developed each of the selected alternatives whose score was 4 or greater because of time constraints. If time permits, 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 cost savings if implemented.

Recommendation Phase – During this phase the VE Team reviews the alternative ideas to confirm which ones are appropriate for the project, provide an opportunity for success and which will improve the value of the project if implemented.

Presentation Phase – the team made a presentation to the Georgia Department of Transportation on the last day of the workshop. This presentation was designed to express the intent and clarify each of the recommended alternatives. This report is intended to formalize those findings.

1.3 OBSERVATIONS

The VE team noted that the two water mains that are slated to be constructed on one trench are in fact being constructed in two separate trenches to suit conditions. Since the 36" is being installed below the 12" line, it might be worthwhile to give consideration to allowing the two pipelines to be constructed independently which could increase productivity and reduce construction delays.

1.4 CONCLUSIONS AND RECOMMENDATIONS

The VE Team identified, developed, and recommends **seven design alternatives** for implementation to improve the value of the project as shown on the following page:

2 STUDY RESULTS

2.1 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; opportunities and risks; technical discussions; sketches; calculations; and a cost estimate of the impact of the alternative.

It should be noted that the estimated cost/savings calculated for these alternatives are very preliminary and are only presented to indicate a probable magnitude of cost impact on the project.

Also, these alternatives are "stand alone" ideas. In some cases they may be "added" to another alternative, or in other cases they may present a different method of constructing the same elements and are therefore not additive. A summary is provided in Section 1-4 - Conclusions and Recommendation.

Therefore the users of this report are asked to consider these alternatives as a smorgasbord of choices for selection and use as appropriate as the project progresses.

2.2 COST CALCULATIONS

The cost calculations are intended only as an indicator 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.

2.3 ALTERNATIVES AND DESIGN SUGGESTIONS

Following are the ***seven design alternatives*** for implementation to improve the value of the project:

2.3.1 ALTERNATIVE NUMBER RD - 1

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-1
DESCRIPTION:	Use profile milling from 2 ½” to 0” in-lieu of full depth (2.5”) milling	SHEET NO.: 1 of 4

Original Design:

The original design proposes 2.5” milling of the entire roadway and putting back 1.5” of 12.5mm asphalt. By doing this, it would result in reclaiming 1” of the vertical face of the curb.

46,300 sy @ \$4.0/sy = \$185,000

Alternative:

The alternative design would be to profile mill 2.5” at the gutter lines to 0” at 10 foot lane lines on both sides of the roadway.

30,867 sy @ \$3.50 sy = \$108,035.

Opportunities:

- less impact on travelling public
- less overall duration of the contract

Risks:

- not milling all of the existing cracks in travel lanes on Northside Drive

Technical Discussion:

It may slightly alter the cross slope’s on Northside Drive, however it will still be in compliance with established GDOT guidelines and requirements. It will also lessen the impact to milling around existing manholes in the roadway and will require less adjustments of these utilities.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 203,720	\$ 0	\$ 203,720
ALTERNATIVE	\$ 118,839	\$ 0	\$ 118,839
SAVINGS	\$ 84,882	\$ 0	\$ 84,882

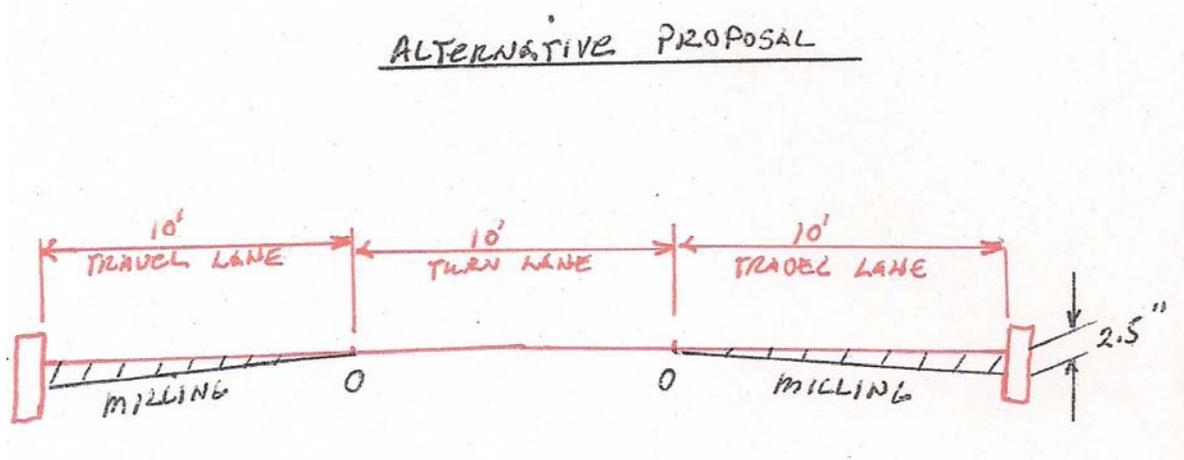
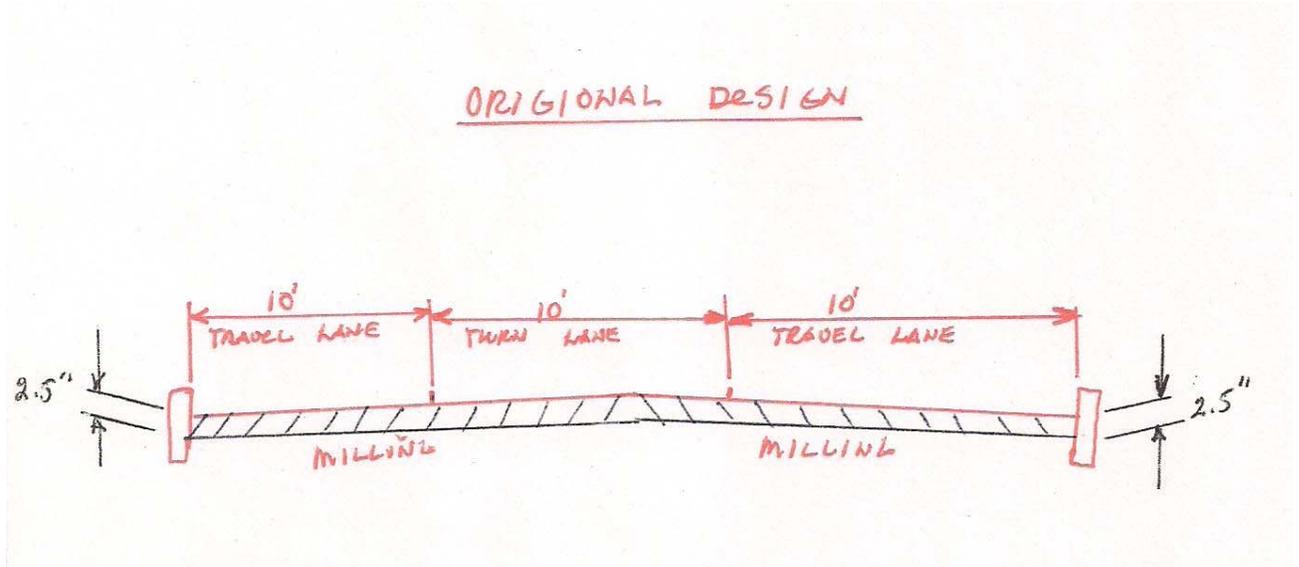
Illustrations

PROJECT: **Georgia Department of Transportation
STP00-0004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: Use profile milling from 2 ½" to 0" in-lieu of full depth (2.5") milling

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



Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-1
DESCRIPTION:	Use profile milling from 2 ½” to 0” in-lieu of full depth (2.5”) milling	SHEET NO.: 3 of 4

Milling Cost:

Used plan quantity of 46,300 square yards @ GDOT estimated cost of \$4.00/square yard, which totals \$185,200 to mill the entire project 2.5 inches in depth.

As an alternate design, the team proposes profile milling the two travel lanes from 2.5 inches at the gutter lines to 0 inch at the 10 foot lane joints.

Since there are 3-10 foot lanes throughout this project, we took the original plan quantity of 46,300 square yards and reduced it by one-third, which gives a quantity of 30,867 square yards of variable depth milling at an estimated cost of \$3.50 per square yard. (2 1/2inches to 0 inches milling)

Cost Worksheet

PROJECT:		Georgia Department of Transportation STP00-0004-00(166) - P.I. No. 0004166 Northside Drive Safety Improvements Fulton County				ALTERNATIVE NO.:		RD- 1
DESCRIPTION:		Use profile milling from 2 1/2' to 0" in-lieu of full depth (2 1/2") milling				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	
Jimmerson/Delray								
12.5 mm Superpave	TN	0		\$ -	0		\$ -	
19.0 mm Superpave	TN	0		\$ -	0		\$ -	
25.0 mm Superpave	TN	0		\$ -	0		\$ -	
mill asphalt concrete pavement 2.5 " depth	sy	46,300	\$ 4.00	\$ 185,200	30,867	\$ 3.50	\$ 108,035	
Sub-total				\$ 185,200			\$ 108,035	
Cons't Mark-up 10.00%				\$ 18,520			\$ 10,804	
TOTAL				\$ 203,720			\$ 118,839	
Estimated Savings:							\$ 84,882	

2.3.2 ALTERNATIVE NUMBER RD-3

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:
		RD-3
DESCRIPTION:	Meander sidewalk to avoid utilities	SHEET NO.: 1 of 2

Original Design:

The original design proposes to place sidewalks at 4.5’ or 2’ offset from curb (except where adjusted for ROW negotiations).

Alternative:

The alternative design is to meander sidewalk/trail as necessary to avoid impacts to utilities.

Opportunities:

- Reduction in cost of utility relocations
- Reduction in time required for utility relocations

Risks:

- None

Technical Discussion:

Meandering the sidewalk around utilities would reduce the time required for utility relocation as well as the cost for the utility relocations. It is assumed that all this can be done within the existing ROW or ROW being acquired by project. No additional ROW is anticipated.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 420,000	\$ 0	\$ 420,000
ALTERNATIVE	\$ 0	\$ 0	\$
SAVINGS	\$ 420,000	\$ 0	\$ 420,000

Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-3
DESCRIPTION:	Meander sidewalk to avoid utilities	SHEET NO.: 2 of 2
<p>There were several utilities that were being impacted by the sidewalk and/or the trail:</p> <p>PATH trail – 1 guy wire at sta. 149+50 RT 1 telephone vault at sta. 144+00 RT 2 water vaults at sta. 143+25 RT</p> <p>Sidewalk – 1 power pole at sta. 106+60 LT 1 sanitary sewer manhole at sta. 117+70 LT 1 power pole at sta. 119+00 LT 1 sanitary sewer manhole at sta. 123+00 LT 1 power pole at sta. 125+90 LT 1 power pole at sta. 126+10 LT 1 power pole at sta. 128+90 LT 1 power pole at sta. 129+00 RT 1 power pole at sta. 132+00 RT 1 telephone vault at sta. 135+50 RT 1 power pole at sta. 137+90 LT 1 power pole at sta. 145+50 LT 1 power pole at sta. 147+75 LT</p> <p>Assumed costs Power poles (distribution) – \$10K x 11 = \$110K Telephone vaults – \$100K x 2 = \$200K Water vaults – \$50K x 2 = \$100K Sanitary sewer manholes - \$5K x 2 = \$10K</p> <p>Total utility relocation costs = \$420K (if left sidewalk where is proposed)</p> <p>No additional quantities would be needed for the sidewalk.</p>		

2.3.3 ALTERNATIVE NUMBER RD-7

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:	RD-7
DESCRIPTION:	Delete milling from beginning to Sta. 157+00	SHEET NO.:	1 of 4

Original Design:
 The original design proposes to mill the entire project.

Alternative:
 The alternative design is to delete the milling from the beginning of project to Sta. 157+00

<p>Opportunities:</p> <ul style="list-style-type: none"> • Less impact on traveling public • Would reduce overall duration of project • Reduce initial construction cost 	<p>Risks:</p> <ul style="list-style-type: none"> • None apparent
--	--

Technical Discussion:
 Since placing new curb throughout this section, the 2.5” of milling to reclaim the curb would not be required. When the contractor sets the new curb, they can place it such that the appropriate height of curb face is established. Only the new 1.5" overlay in this section would be required.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 79,125	\$ 0	\$ 79,125
ALTERNATIVE	\$ 0	\$ 0	\$ 0
SAVINGS	\$ 79,125	\$ 0	\$ 79,125

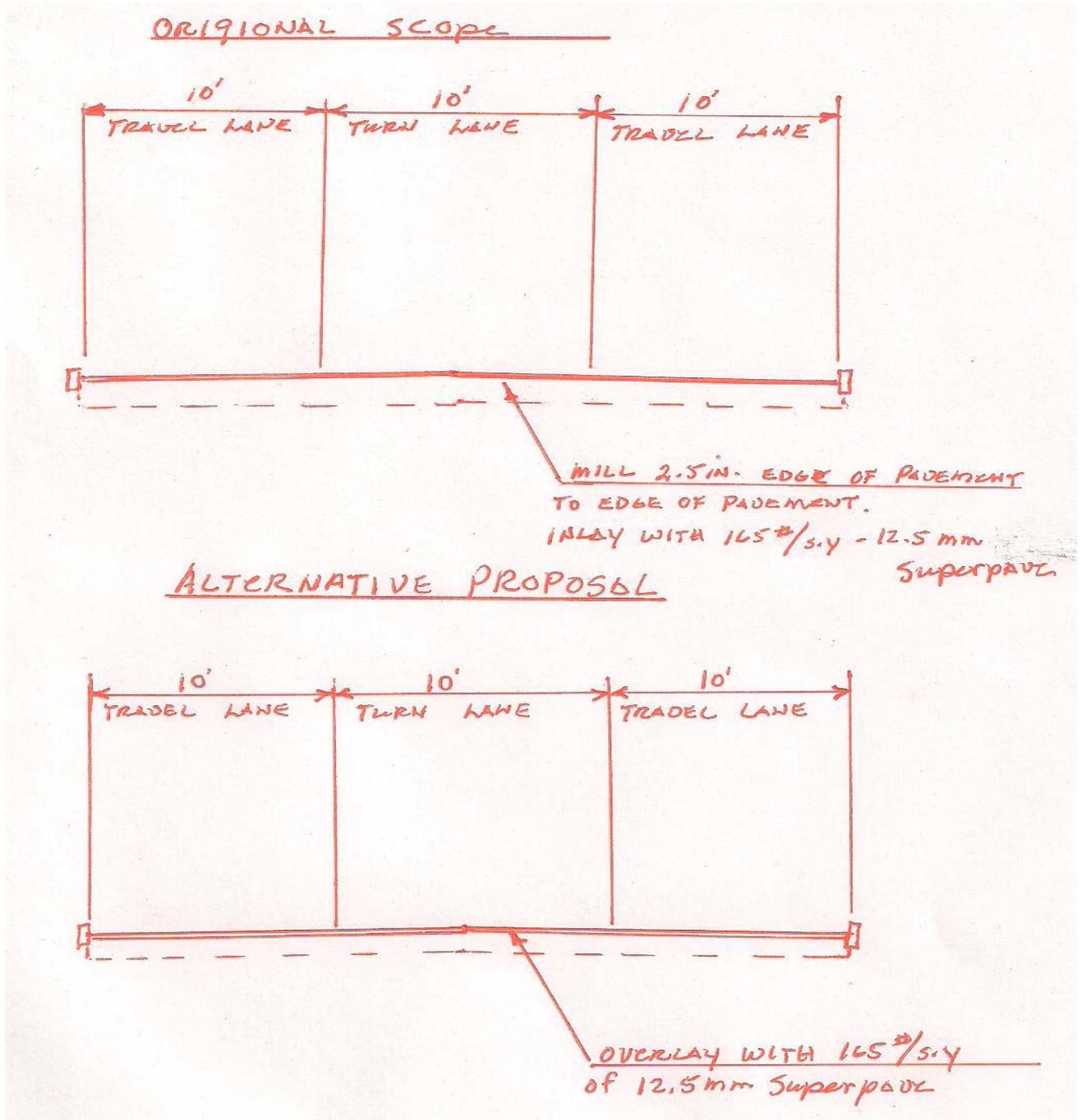
Illustrations

PROJECT: Georgia Department of Transportation
STP00-0004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County

ALTERNATIVE NO.:
RD-7

DESCRIPTION: Delete milling from beginning to Sta. 157+00

SHEET NO.: 2 of 4



Calculations

PROJECT: **Georgia Department of Transportation
STP00-0004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County**

ALTERNATIVE NO.:
RD-7

DESCRIPTION: **Delete milling beginning to Sta. 157+00**

SHEET NO.: **3 of 4**

Begin sta. = 103+05

End sta. = 157+00

Total length = 5,395'

30' width of pavement

Milling = 5,395' x 30' = 161,850 sf = 17, 983 sy

Cost Worksheet

PROJECT: Georgia Department of Transportation					ALTERNATIVE NO.:		
STP00-0004-00(166) - P.I. No. 0004166					RD- 7		
Northside Drive Safety Improvements							
Fulton County							
DESCRIPTION: Delete milling beginning to Sta. 157+00					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
Milling (2.5")	SY	17,983	\$ 4.00	\$ 71,932		\$ 4.00	\$ -
Sub-total				\$ 71,932			\$ -
Cons't Mark-up 10.00%				\$ 7,193			\$ -
TOTAL				\$ 79,125			\$ -
Estimated Savings:							\$79,125



2.3.4 ALTERNATIVE NUMBER RD-13

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-13
DESCRIPTION:	End roadway project at Sta. 229+00 +/-	SHEET NO.: 1 of 4

Original Design:

The original design proposes to terminate the project at Sta. 235+00.

Alternative Design:

The alternative design is to move the terminus to Sta. 229+00.

Opportunities:

- Reduce initial construction cost
- Reduce the construction duration

Risks:

- None apparent

Technical Discussion:

The only work proposed from Sta. 229+00 to Sta. 235+00 is the milling and resurfacing of the existing Northside Parkway which is now a four lane section. By inspection, it appears that this area has been recently overlaid and restriped.

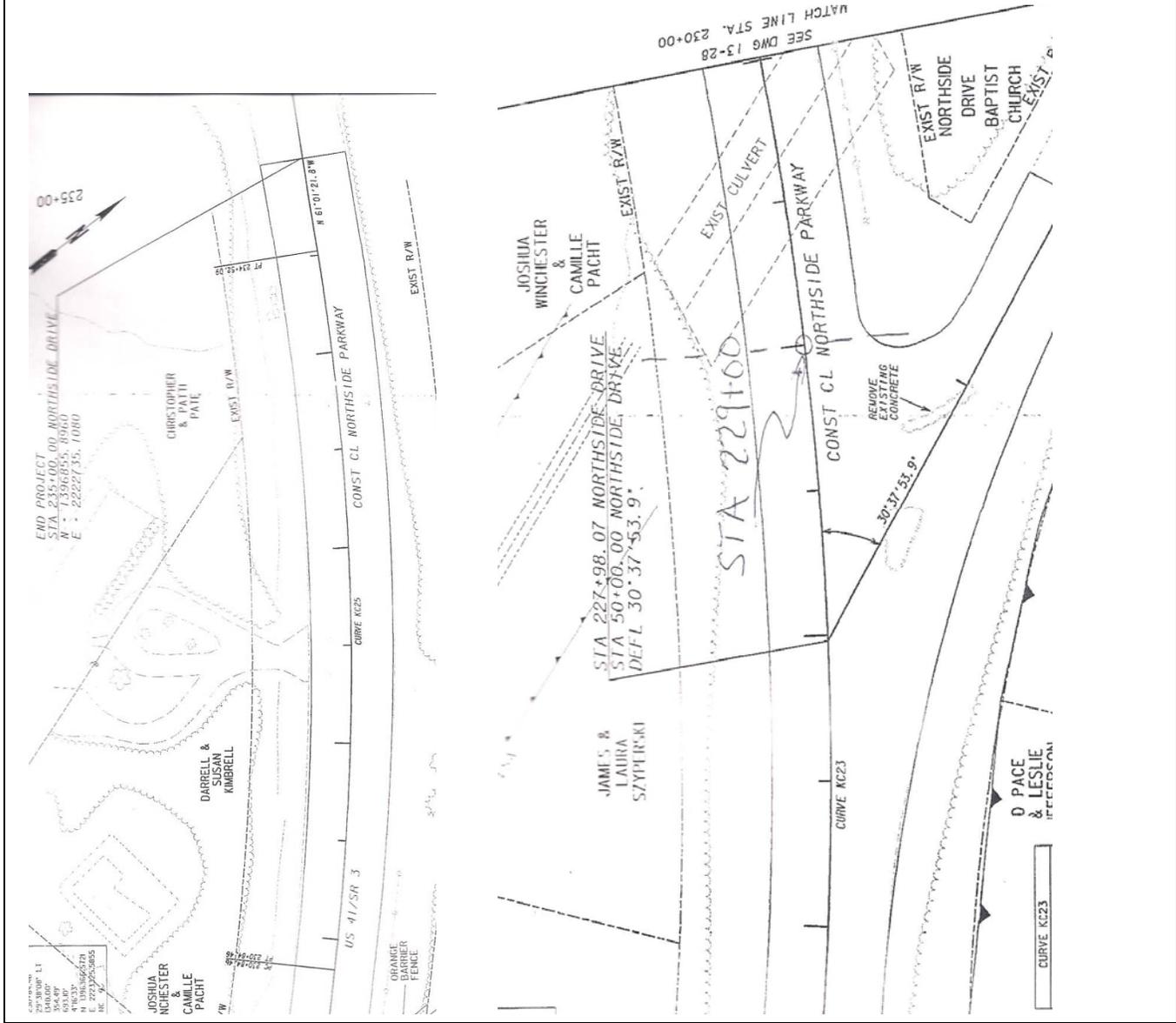
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 562,183	\$ 0	\$ 562,183
ALTERNATIVE	\$ 532,299	\$ 0	\$ 532,299
SAVINGS	\$ 29,884	\$ 0	\$ 29,884

Illustrations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-13
DESCRIPTION:	End project at sta. 229+00 +/-	SHEET NO.: 2 of 4

Current Design ends at Sta. 235+00

Alternative Design ends at Sta. 229+00



Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:	RD-13																						
DESCRIPTION:	End project at sta. 229+00	SHEET NO.:	3 of 4																						
<p>Only milling and overlay in this section.</p> <p>12.5mm</p> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Material</th> <th style="text-align: left;">Location</th> <th style="text-align: left;">FROM</th> <th style="text-align: left;">TO</th> <th style="text-align: left;">Length</th> <th style="text-align: left;">Width</th> <th style="text-align: left;">SF</th> <th style="text-align: left;">SY</th> <th style="text-align: left;">#/sy</th> <th style="text-align: left;">#/cf</th> <th style="text-align: left;">Tons</th> </tr> </thead> <tbody> <tr> <td>12.5mm</td> <td>229+00 to 235+00</td> <td>229+00</td> <td>235+00</td> <td>600</td> <td>40</td> <td>24,000</td> <td>2667</td> <td>165</td> <td></td> <td>220</td> </tr> </tbody> </table> <p style="margin-top: 10px;">Milling would be the same area = 2,667 sy</p>				Material	Location	FROM	TO	Length	Width	SF	SY	#/sy	#/cf	Tons	12.5mm	229+00 to 235+00	229+00	235+00	600	40	24,000	2667	165		220
Material	Location	FROM	TO	Length	Width	SF	SY	#/sy	#/cf	Tons															
12.5mm	229+00 to 235+00	229+00	235+00	600	40	24,000	2667	165		220															

Cost Worksheet

PROJECT: Georgia Department of Transportation STP00-0004-00(166) - P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD- 13
DESCRIPTION: End roadway project at 229+00 +/-	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
12.5 mm Superpave	TN	4,345	\$ 75.00	\$ 325,875	4,125	\$ 75.00	\$ 309,375
19.0 mm Superpave	TN	0	\$ 80.00	\$ -	0	\$ 80.00	\$ -
25.0 mm Superpave	TN	0	\$ 70.00	\$ -	0	\$ 70.00	\$ -
GAB	SY	0	\$ 25.00	\$ -	0	\$ 25.00	\$ -
Class B Widening	CY	0	\$ 200.00	\$ -	0	\$ 200.00	\$ -
Milling (2.5")	SY	46,300	\$ 4.00	\$ 185,200	43,633	\$ 4.00	\$ 174,533
Sub-total				\$ 511,075			\$ 483,908
Const't Mark-up 10.00%				\$ 51,108			\$ 48,391
TOTAL				\$ 562,183			\$ 532,299
Estimated Savings:							\$29,884



2.3.5 ALTERNATIVE NUMBER RD-18

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-18
DESCRIPTION:	Lessen restrictive closures during the period between the Thanksgiving and Christmas holidays	SHEET NO.: 1 of 3

Original Design:

The original design proposes that lane closures will not be allowed beginning 7 am Wednesday before Thanksgiving and through to the first weekday after New Year’s Day.

Alternative:

The alternative design is to allow lane closures during the weekdays as similar to other times of the year.

Opportunities:

- Gain additional 6 weeks of work for each year project is under construction
- Reduce the amount of time of disturbance to the traveling public
- Reduce the initial cost

Risks:

- None apparent

Technical Discussion:

Due to the fact that 8,800 lf of this project site has a right-of-way of 50' with the remaining 4,600 lf being 100', the contractor will most likely have to close at least one lane to work anywhere on the project. Most of the project is residential with the exception of a school and a few churches. There are no obvious shopping areas within the project which would bring additional traffic during the holiday season. During this closure time the contractor will have the cost of the equipment and people to bear which may impact the cost of the project to the owner.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 303,490	\$ 0	\$ 303,490
ALTERNATIVE	\$ 0	\$ 0	\$
SAVINGS	\$ 303,490	\$ 0	\$ 303,490

Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-18
DESCRIPTION:	Lessen restrictive closures during the period between the Thanksgiving and Christmas holidays	SHEET NO.: 2 of 3

Total cost of project: \$14,761,601
 roadway = \$2,267,413 +
 water main = \$12,494,188 =

For the water main, the documents call for 330 calendar days or 235 work days; and for the paving, assume a 270 calendar days or 193 work days for a total of 428 days.

Cost per day = \$14,761,601 / 428 day = \$34,489 per day

Assume that 25% of the cost is for contractor overhead
 Assume that 10% of the cost would be for equipment
 Assume that 5% of the cost is for contractor profit;
 Total cost to operate per day = 40% x \$34,489 = \$13,795 per day

The work days lost from Thanksgiving to Jan. 2 = 4 weeks = 20 days

Therefore the approximate cost is \$275,917

Cost Worksheet

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) - P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:	RD-18
DESCRIPTION:	Lessen restrictive closures during the period between the Thanksgiving and Christmas holidays	SHEET NO.:	3 of 3

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
Contractor Expense for down time	days	20	\$13,795	\$275,900	0	\$13,795	\$0
Sub-total				\$ 275,900			\$ -
Cons't Mark-up 10.00%				\$ 27,590			\$ -
TOTAL				\$ 303,490			\$ -
Estimated Savings:							\$303,490



2.3.6 ALTERNATIVE NUMBER RD-20

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-20
DESCRIPTION:	Construct 3-11' lanes from the project beginning to Collier Road	SHEET NO.: 1 of 5

Original Design:

The original design proposes to retain the existing 3 - 10' lanes and restripe the roadway operation from a reversible center lane to two south bound lanes and one north bound with a new right turn lane onto Collier Road eastbound. Also, the project will provide a new sidewalk and curbing along the west side of the roadway. The project will also provide a new 12" and a new 36" water main in the same 8.5' trench along the westerly edge of the existing roadway.

Alternative:

The alternative design is to incorporate into the planned work and reconstruction of the existing roadway a 1' widening of each of the 10' proposed lanes from the beginning of the project to Collier Road.

Opportunities:

- Greater comfort level of driver
- More clearance between vehicles
- Moves the wheel path of vehicle further away from curb, lessening maintenance
- Restricted/narrow lanes can often affect the capacity of the roadway, drivers tend to drive slower

Risks:

- Additional cost to the project

Technical Discussion:

ROW width in this area is 100' and the shoulder is 14' typical here. The curbing here is being replaced, so we are proposing moving it over 3' and reducing the shoulder to 11'. ROW would not change, since this proposal includes reducing the shoulder from 14' to 11' to be able to gain the additional 3' of pavement desired. From the AASHTO Geometric Design of Highways and Streets 2004 page 311 "the lane width of a roadway greatly influences the safety and comfort of driving. Lane widths of 9-12 ft are generally used, with 12 ft lane predominant on most high-type highways. The extra cost of providing a 12 ft lane width, over the cost of providing a 10 ft lane width is offset to some extent by a reduction in const of shoulder maintenance and a reduction in surface maintenance due to lessened wheel concentrations at the pavement edges. Lane widths also affect highway level of service. Narrow lanes force drivers to operate their vehicles closer to each other laterally than they would normally desire. In addition to the capacity effect, the resultant erratic operation has an undesirable effect on driver comfort and crash rates...Where continuous two way left turn lanes are provided, a lane width of 10'-16' provides the optimum design."

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 0	\$ 0	\$ 0
ALTERNATIVE	\$ 30,808	\$ 0	\$ 30,808
SAVINGS	\$ (30,808)	\$ 0	\$ (30,808)

Illustrations

PROJECT: **Georgia Department of Transportation
STP00-0004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County**

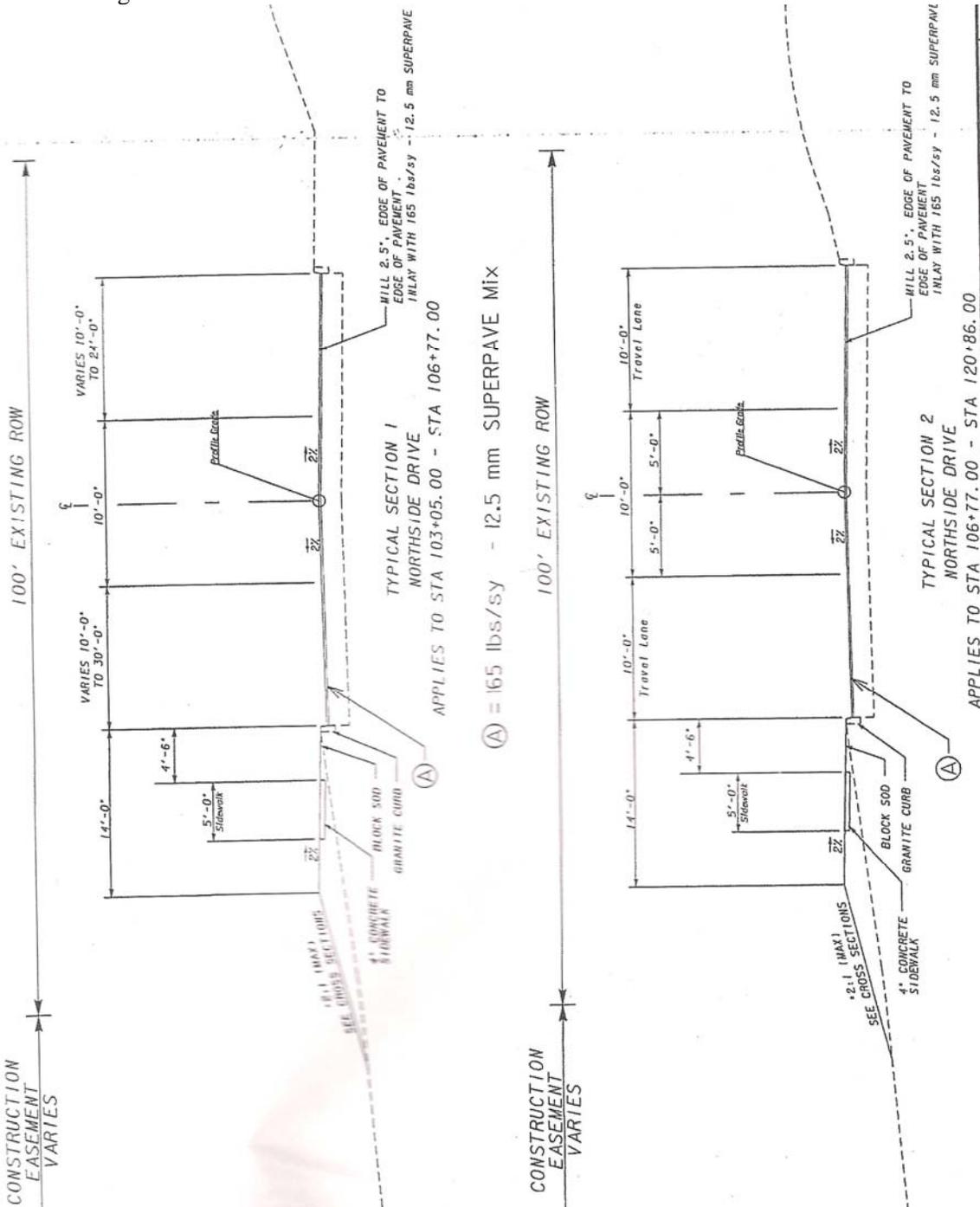
ALTERNATIVE NO.:

RD-20

DESCRIPTION: Construct 3-11' lanes from the project beginning to Collier Road

SHEET NO.: **2** of **5**

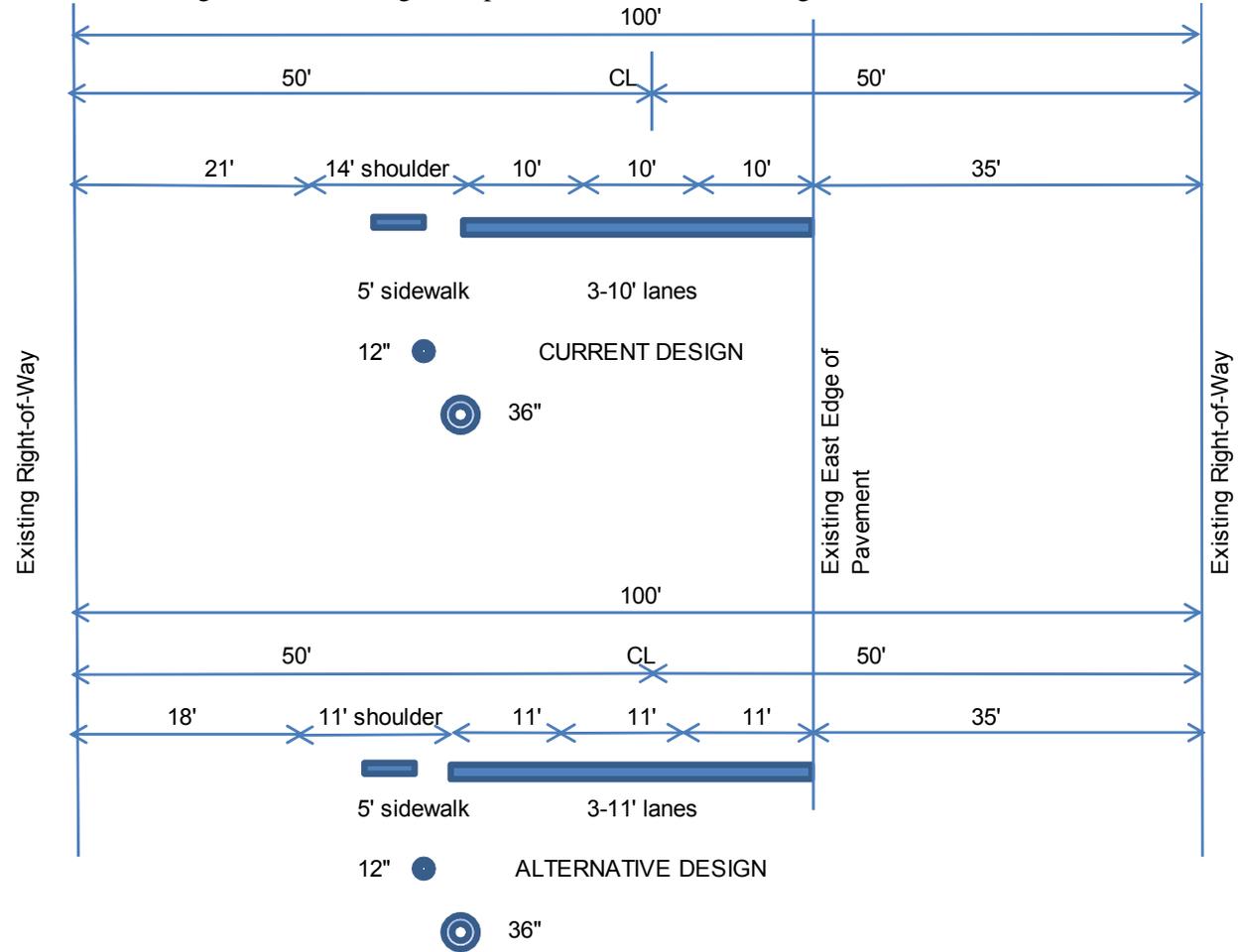
Current Design



Illustrations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:	RD-20
DESCRIPTION:	Construct 3-11' lanes from the project beginning to Collier Road	SHEET NO.:	3 of 5

Alternative Design: Current Design comparison to Alternative Design



Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-20
DESCRIPTION:	Construct 3-11' lanes from beginning to Collier Road	SHEET NO.: 4 of 5

Since the widening is less than 5', only Class B and 165 12.5 mm super pave will be required.

Begin project sta. = 103+05
 Collier road sta. = 124+18
 Total length = 2,113'

Class B (assume depth of 0.5')

$3' \times 2,113 \times 0.5' = 3,169 \text{ cf}$
 $3,169/27 = 117.4 \text{ cy}$

12.5mm

Material	Location	FROM	TO	Length	Width	SF	SY	#/sy	#/cf	Tons
12.5mm	Beg to Collier	103+05	124+18	2,113	3	6,339	704	165		58

Bituminous Tack Coat (use 0.6 gal/sy)

$704 \text{ sy} \times 0.6 \text{ gal/sy} = 42 \text{ gallons}$

Cost Worksheet

PROJECT: Georgia Department of Transportation STP00-0004-00(166) - P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: <div style="text-align: right; font-weight: bold; font-size: 1.2em;">RD- 20</div>
DESCRIPTION: Construct 3-11' lanes from beginning to Collier Road	SHEET NO.: 5 of 5

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
12.5 mm Superpave	TN	0	\$ 75.00	\$ -	58	\$ 75.00	\$ 4,358
19.0 mm Superpave	TN	0	\$ 80.00	\$ -	0	\$ 80.00	\$ -
25.0 mm Superpave	TN	0	\$ 70.00	\$ -	0	\$ 70.00	\$ -
GAB	SY	0	\$ 25.00	\$ -	0	\$ 25.00	\$ -
Class B Widening	CY	0	\$ 200.00	\$ -	117.4	\$ 200.00	\$ 23,480
Bituminous Tack Coat	Gal	0	\$ 4.00	\$ -	42	\$ 4.00	\$ 169
Sub-total				\$ -			\$ 28,007
Cons't Mark-up 10.00%				\$ -			\$ 2,801
TOTAL				\$ -			\$ 30,808
Estimated Savings:							(\$30,808)



2.3.7 ALTERNATIVE NUMBER RD-21

Value Analysis Design Alternative

PROJECT:	Georgia Department of Transportation STP00-00004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.:	RD - 21
DESCRIPTION:	Widen road 3' in conjunction with the construction of the water mains	SHEET NO.:	1 of 5

Original Design:

The original design proposes to mill and overlay the existing Northside Drive (3-10' lanes) and to construct a new 12" water distribution line and a new 36" water transmission main along the majority of the project length. The new water lines will be installed in the same trench.

Alternative Design:

The alternative design is to widen the existing roadway to have a minimum of two 11' outside lanes with the possibility of having the middle two way left turn lane being 11' as well.

Opportunities:

- Provide a wider roadway section at no additional cost
- Decrease construction time

Risks:

- May incur an additional expense

Technical Discussion:

From the AASHTO Geometric Design of Highways and Streets 2004 page 311 "the lane width of a roadway greatly influences the safety and comfort of driving. Lane widths of 9-12 ft are generally used, with 12 ft lane predominant on most high-type highways. The extra cost of providing a 12 ft lane width, over the cost of providing a 10 ft lane width is offset to some extent by a reduction in cost of shoulder maintenance and a reduction in surface maintenance due to lessened wheel concentrations at the pavement edges. Lane widths also affect highway level of service. Narrow lanes force drivers to operate their vehicles closer to each other laterally than they would normally desire. In addition to the capacity effect, the resultant erratic operation has an undesirable effect on driver comfort and crash rates...Where continuous two way left turn lanes are provided, a lane width of 10'-16' provides the optimum design." The current design will necessitate that an 8'-6" wide trench be constructed for the new water mains. The design calls for the pipes/trench to be located under the westerly pavement from the project beginning to Sta. 214+50 +/- . At Sta. 227+00 +/- only the 36" is extended and is proposed to be installed under the easterly portion of the roadway to the Northside Dr. & Northside Parkway split. The existing roadway consists of a right-of-way of varying widths (50' to 100') and 30' of pavement with periodic header curbs, and curb with gutters. Since a significant portion of the cost to construct a new roadway is in the cost of the land, site preparation, drainage, curbs, etc. the cost to construct only the base and pavement is relatively minor as shown below.

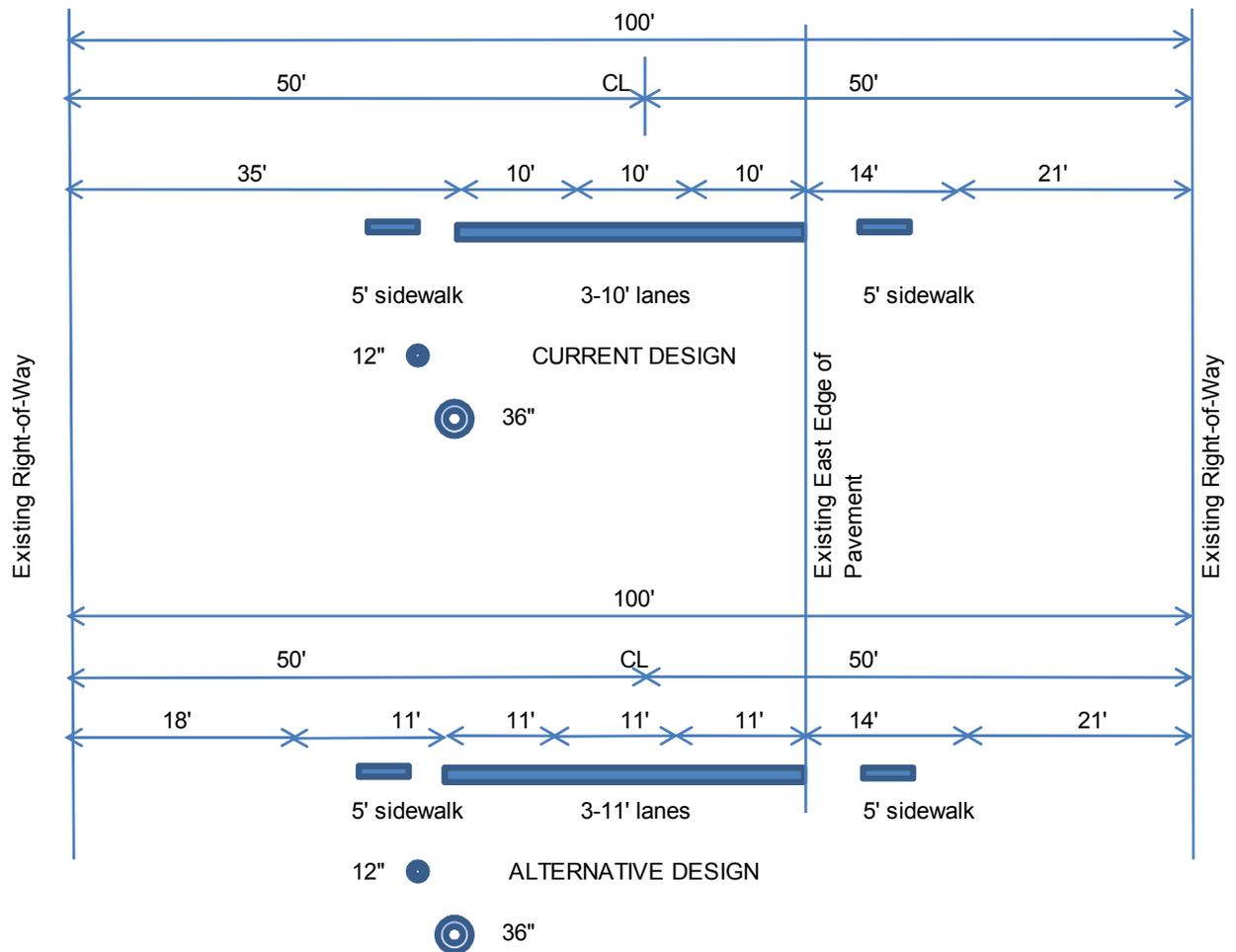
COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 0	\$ 0	\$ 0
ALTERNATIVE	\$ 192,370	\$ 0	\$ 192,370
SAVINGS	\$ (192,370)	\$ 0	\$ (192,370)

Illustration

PROJECT: **Georgia Department of Transportation
STP00-00004-00(166) – P.I. No. 0004166
Northside Drive Safety Improvements
Fulton County** ALTERNATIVE NO.: **RD - 21**

DESCRIPTION: **Widen road in conjunction with the construction of the water main** SHEET NO.: **2 of 5**

Current Design showing new water mains and Alternative Design showing new water mains



Calculations

PROJECT:	Georgia Department of Transportation STP00-0004-00(166) – P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: RD-21
DESCRIPTION:	Widen roadway 3' in conjunction with construction of water mains	SHEET NO.: 3 of 5

Since the widening is less than 5', only Class B and 165 12.5 mm super pave will be required.

Begin project sta. = 103+05
 End of project sta. = 235+00
 Total length = 13,195'

Class B (assume depth of 0.5')
 $3' \times 13,195' \times 0.5' = 19,793 \text{ cf}$
 $19,793/27 = 733 \text{ cy}$

12.5mm

Material	Location	FROM	TO	Length	Width	SF	SY	#/sy	#/cf	Tons
12.5mm	Beg to End	103+05	235+00	13,195	3	39585	4398	165		363

Bituminous Tack Coat (use 0.6 gal/sy)

$4398 \text{ sy} \times 0.6 \text{ gal/sy} = 264 \text{ gallons}$

Note: Costs for construction of the two outside lines as 11' with the two-way turn lane as a 10' are presented on page 5 of 5 of this set. Also, it was suggested that it making the two way turn lane a 12' lane might be a preferable improvement.

Cost Worksheet

PROJECT: Georgia Department of Transportation STP00-0004-00(166) - P.I. No. 0004166 Northside Drive Safety Improvements Fulton County	ALTERNATIVE NO.: <div style="text-align: right; font-weight: bold; font-size: 1.2em;">RD- 21</div>
DESCRIPTION: Widen roadway (3') in conjunction with construction of watermain	SHEET NO.: 4 of 5

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
12.5 mm Superpave	TN	0	\$ 75.00	\$ -	363	\$ 75.00	\$ 27,215
19.0 mm Superpave	TN	0	\$ 80.00	\$ -	0	\$ 80.00	\$ -
25.0 mm Superpave	TN	0	\$ 70.00	\$ -	0	\$ 70.00	\$ -
GAB	SY	0	\$ 25.00	\$ -	0	\$ 25.00	\$ -
Class B Widening	CY	0	\$ 200.00	\$ -	733	\$ 200.00	\$ 146,611
Bituminous Tack Coat	Gal	0	\$ 4.00	\$ -	264	\$ 4.00	\$ 1,056
Sub-total				\$ -			\$ 174,881
Const't Mark-up 10.00%				\$ -			\$ 17,488
TOTAL				\$ -			\$ 192,370

Estimated Savings: (\$192,370)



Cost Worksheet

PROJECT: Georgia Department of Transportation		ALTERNATIVE NO.:					
STP00-0004-00(166) - P.I. No. 0004166		RD- 21					
Northside Drive Safety Improvements							
Fulton County							
DESCRIPTION: Widen roadway (2') in conjunction with construction of watermain					SHEET NO.: 5 of 5		
CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/ UNIT	TOTAL	NO. OF UNITS	COST/ UNIT	TOTAL
12.5 mm Superpave	TN	0	\$ 75.00	\$ -	242	\$ 75.00	\$ 18,143
19.0 mm Superpave	TN	0	\$ 80.00	\$ -	0	\$ 80.00	\$ -
25.0 mm Superpave	TN	0	\$ 70.00	\$ -	0	\$ 70.00	\$ -
GAB	SY	0	\$ 25.00	\$ -	0	\$ 25.00	\$ -
Class B Widening	CY	0	\$ 200.00	\$ -	489	\$ 200.00	\$ 97,741
Bituminous Tack Coat	Gal	0	\$ 4.00	\$ -	176	\$ 4.00	\$ 704
Sub-total				\$ -			\$ 116,588
Const't Mark-up 10.00%				\$ -			\$ 11,659
TOTAL				\$ -			\$ 128,246
Estimated Savings:							(\$128,246)

3 PROJECT DESCRIPTION

The proposed project consists of roadway and waterline improvements along Northside Drive/SR3/US41 from I-75 to just north of the Northside Drive/Northside Parkway intersection. The roadway portion of the project from I-75 to Collier Road includes converting the existing reversible lane to a southbound through lane. Also, a right turn lane is proposed for the existing northbound lane to the Collier Road eastbound. From Collier north the work includes converting the reversible lane to a two-way left turn lane until it connects to the existing 4 lane section.

Existing signals will be upgraded to provide for pedestrian access as well as adding a left turn lane from southbound Northside to Collier Road. In addition, new curb and sidewalks will be constructed on the westbound side from I-75 to Wesley Drive. Sidewalks will also be constructed on the eastbound side from Collier Road to the Tennis Court drive where a PATH trail will be built on the Bobby Jones Golf Course. The entire roadway will be milled 2.5" and overlaid 1.5". The waterline portion of the project includes replacing the existing 20" water main with 36" transmission line along with a 12" distribution line. In addition a new sanitary sewer line will be installed along the project. The proposed project is 2.4 miles and located entirely in Fulton County.

3.1 NEED AND PURPOSE

The existing roadway experiences an excessive rate of accidents primarily due to confusion resulting from the lane reversal operation, line of sight, and narrow driving lanes. The program will change the lane reversal operation to be a two-way left turn lane operation. To effectively revise the lane marking, the roadway will undergo a mill and overlay providing a clean and clear driving surface. Signals will also be modified accordingly. The Northside Drive and Collier Road intersection will be improved by the addition of a northbound to eastbound right turning lane.

3.2 DESIGNERS PRESENTATION

The Jacobs / Atlanta Services Group, made a presentation to the VE Team on Monday morning of the VE Study as part of the information phase. They described the project and its constraints. Discussions included the environmental permitting status and needs of the project.

4 VALUE ENGINEERING PROCESS

4.1 WORK SHOP TEAM

PBS&J's Value Engineering (VE) team performed a VE study January 18-21 in the offices of Georgia Department of Transportation, Atlanta, Georgia. The team followed the SAVE International's seven-step Value Engineering job plan as outlined in this section. The VE Study team consisted of the following members:

Les Thomas, P.E., CVS	Team Leader
Nikki Reutlinger, PE	Team Highway Design Engineer
Mark Weatherby	Team Construction Specialist
Randy Thomas, CVS	Assistant Team Leader

4.2 SEVEN-STEP VALUE ENGINEERING JOB PLAN

The VE team followed the SAVE International's Six-step Value Engineering job plan:

- Information Phase
- Function Analysis Phase
- Speculation/Creative Phase
- Evaluation Phase
- Development Phase
- Recommendation Phase
- Presentation Phase

Information Phase— during this phase of the VE Team's work, the team received a briefing from the GDOT staff members and their design team. 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 made available to the team.

Function Analysis Phase— during this phase the VE Team determined the "**Functions**" of the project. This was accompanied by reviewing the project by asking the questions such as: "*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 that distinguishes a Value Engineering effort from a potentially damaging cost-cutting exercise. A Functional Analysis System Technique (FAST) diagram was prepared highlighting the projects required functions.

Creative Phase — The VE Team performed a brainstorming session to identify ideas that might help meet the project objectives. These ideas fell into the following major headings:

- Roadway
- Water Mains

The brainstorming session identified twenty-eight (28) ideas. See page 1-7 for listing.

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 and the design team members. This guidance emerged on the first day of the study at the kick-off meeting. From that guidance, the team was able to select ideas that they believed would improve the project by a matrix 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:

- First Costs
- Permit-ability
- Constructability
- Reliability
- Operating and Maintenance Costs

Development and Recommendation Phase— During these phases, the VE team developed each of the selected alternatives whose score was 4 or higher because of time constraints. 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 titled **Study Results**).

Presentation Phase— As noted earlier, the team made an informal “out-briefing” on the last day of the workshop. This presentation was 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.

The following is a flow chart that represents the work done prior to, during and after the VE workshop is completed on site:

Source: SAVE International

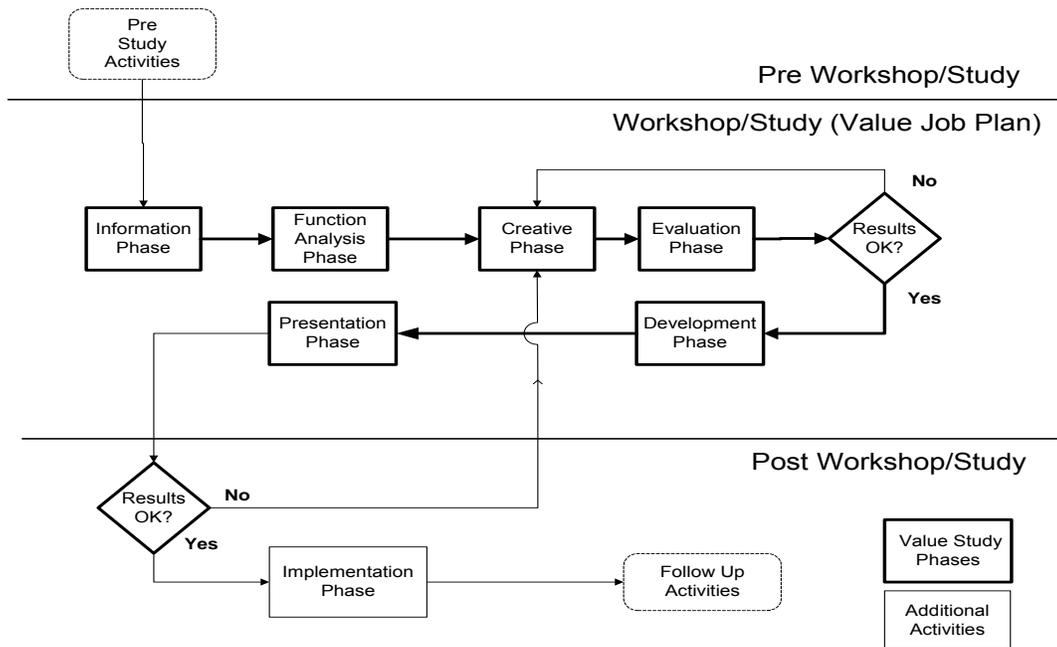


Figure 4-1 – Value Engineering Job Plan

4.3 VE WORKSHOP AGENDA

VALUE ENGINEERING STUDY AGENDA
Northside Drive Safety Improvements
Fulton County
January 18-21, 2011

Pre-Workshop Activities VE team leader organizes study, coordinates with the Owner and Designer to attain the project objectives and materials necessary. The VE team receives and reviews all project documents.

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 needs
 Current Construction Completion Schedule
 Project Cost Estimate if available 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 and project goals
- 10:30-12:00** VE Team reviews project (Information Phase)
 Review design team’s presentation
 Review agenda and goals of the study
- 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
 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 and 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

4.4 CONSTRUCTION CAPITAL COST ESTIMATE

The VE Team was provided with a construction cost estimate. An estimate of the right-of-way acquisition cost was also given to the team . The team used this information to concentrate its efforts towards the area of the project having the least Value.

4.5 FUNCTIONAL ANALYSIS SYSTEM TECHNIQUE (FAST) DIAGRAM

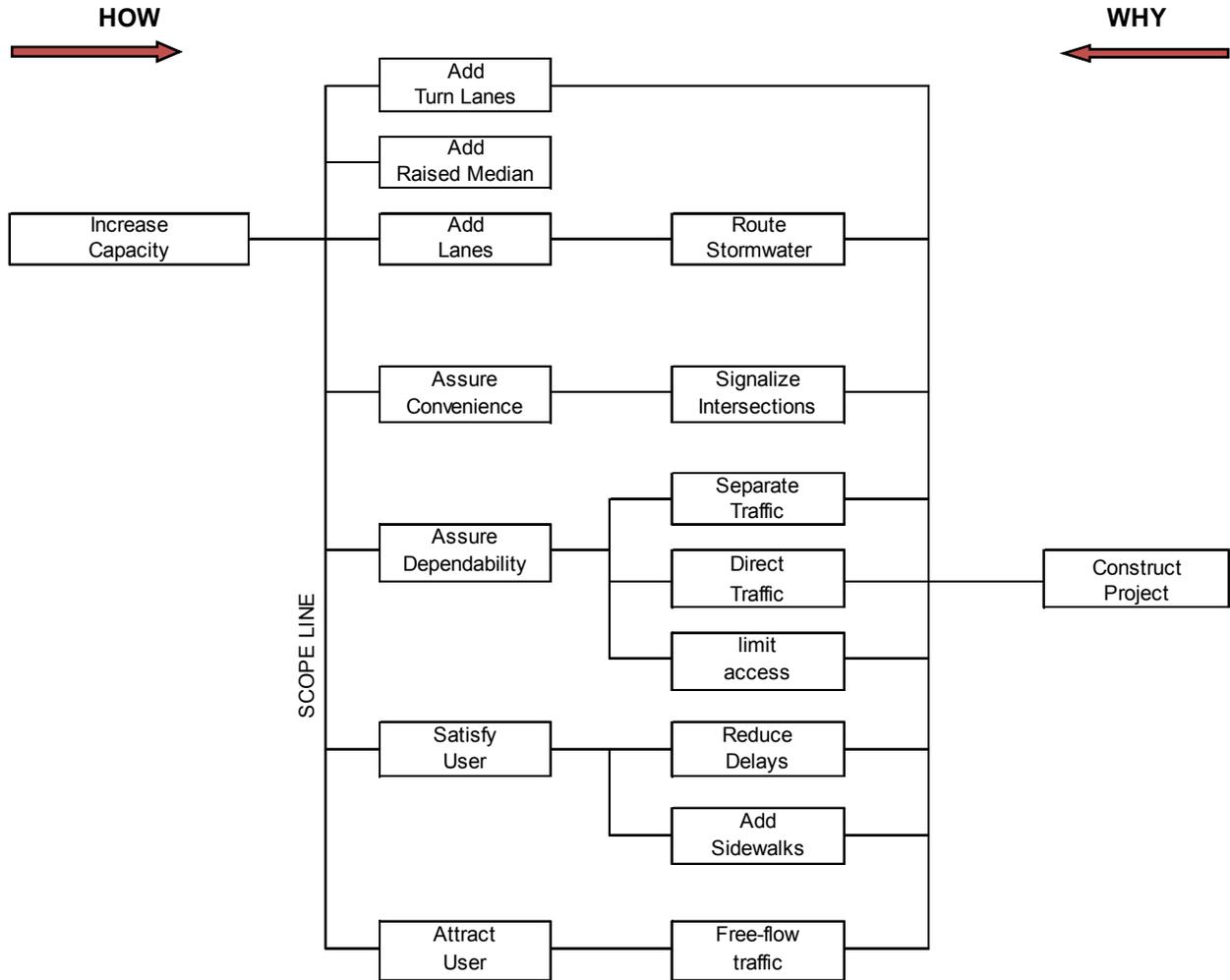
FUNCTIONAL ANALYSIS SYSTEMS TECHNIQUE (FAST)

Northside Drive Safety Improvements

Project No. STP00-0004-00(166) – P.I. No. 0004166

Georgia Department of Transportation

Fulton County



4.6 ATTENDANCE SHEET FOR DESIGNERS AND VE TEAM PRESENTATIONS

DESIGNER PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation			January 18, 2011	
STP00-0004-00(166) - P.I. 0004166				
Northside Drive Safety Improvements				
Fulton County				
NAME	ORGANIZATION & TITLE		E-MAIL	PHONE
Lisa Myers		GDOT - Engineering Services	lm Myers@dot.ga.gov	404-631-1770
Matt Sanders		GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
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Nikki Reutlinger		PBS&J	ngreutlinger@pbsj.com	770-933-0280
Mark Weatherby		PBS&J	mgweatherby@pbsj.com	770-933-0280
Randy Thomas, CVS		PBS&J	rsthomas@pbsj.com	770-883-1545
Richard Lawrence		Jacobs/ASG	richard.lawrence@jacobs.com	678-333-0248
Michael Francis		Jacobs	michael.francis@jacobs.com	678-333-0505
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Lee Hunt		City of Atlanta	lhunt@atlanta.ga.gov	404-658-7274
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Amber Phillips		GDOT-OES	aphillips@dot.ga.gov	404-631-1117
Melissa Harper		GDOT-Construction	mharper@dot.ga.gov	404-631-1971



VE TEAM PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation		January 21, 2011		
STP00-0004-00(166) - P.I. 0004166				
Northside Drive Safety Improvements				
Fulton County				
NAME	ORGANIZATION & TITLE	E-MAIL	PHONE	
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Les Thomas, PE, CVS-Life	 PBS&J	lmthomas@pbsj.com	678-677-6420	
Nikki Reutlinger	 PBS&J	ngreutlinger@pbsj.com	770-933-0280	
Mark Weatherby	 PBS&J	mgweatherby@pbsj.com	770-933-0280	
Richard Lawrence	Jacobs/ASG	richard.lawrence@jacobs.com	678-333-0248	
Michael Francis	Jacobs	michael.francis@jacobs.com	678-333-0505	
George Johnson	 City of Atlanta	gejohnson@atlantaga.gov	404-589-2708	
Lee Hunt	 City of Atlanta	lhunt@atlanta.ga.gov	404-658-7274	
Derrick Cameron	 GDOT-Traffic Operations	dvameron@dot.ga.gov	404-635-8153	

