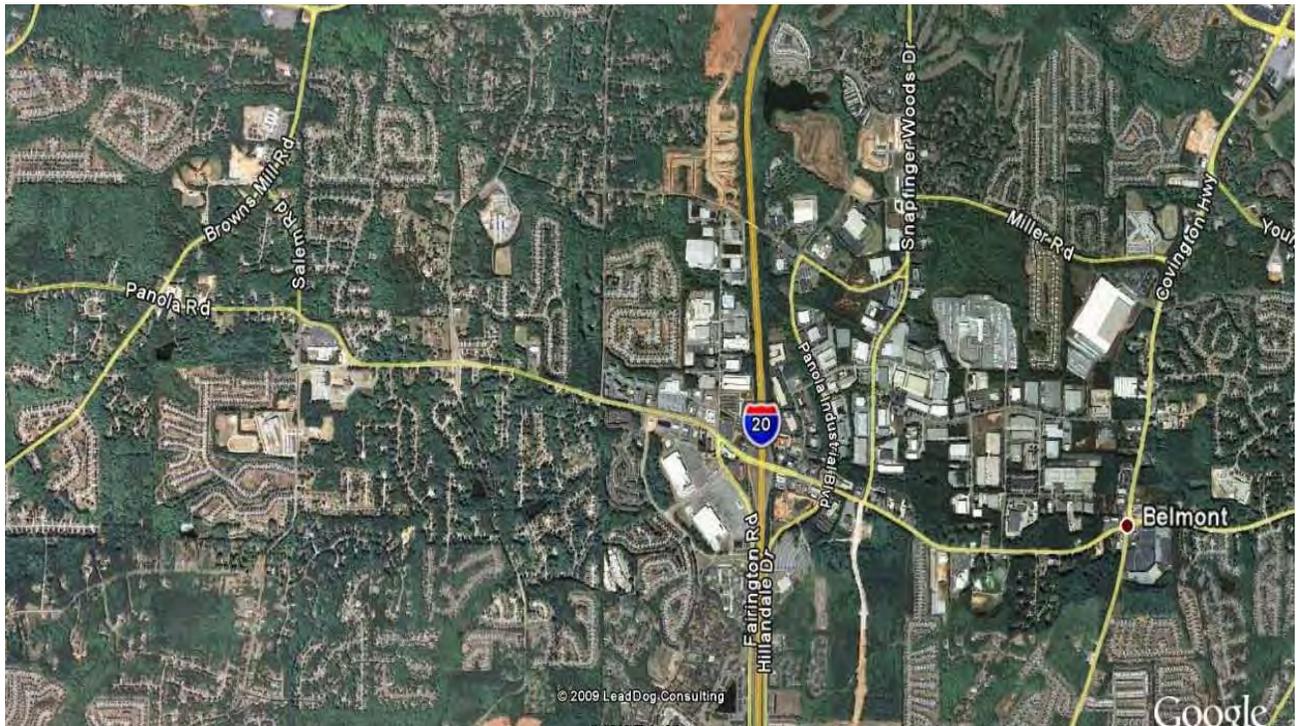


Value Engineering Study Report

*Georgia Department of Transportation
CSSTP-005-00(905) - P.I. No. 0005905
CSSTP-006-00(879) - P.I. No. 0006879
CSSTP-006-00(890) - P.I. No. 0006890*

Panola Road Widening and Rehabilitation, DeKalb County



Value Engineering Team



June 8, 2009

Design Team





June 8, 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
Panola Road, DeKalb County
Project Nos.:
CSSTP-0005-00(905) – P.I. No. 0005905 (Segment 3)
CSSTP-0006-00(879) – P.I. No. 0006879 (Segment 2)
CSSTP-0006-00(890) – P.I. No. 0006890 (Segment 5)

Dear Ms. Myers:

Please find enclosed two (2) hard copies and one (1) CD of our final Value Engineering Report for the Panola Road widening and rehabilitation in Dekalb County.

This Value Engineering Study, which was performed during the period May 26 through May 29, 2009, identified **20 Alternative Ideas** of which **7 Alternative Ideas are recommended for implementation**. In addition, the team is recommending **1 Design Suggestion** for your consideration. We believe that the **Alternative Ideas** recommended may have a significant positive affect on the project.

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

A handwritten signature in black ink that reads 'Les M. Thomas'.

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

A handwritten signature in black ink that reads 'Randy S. Thomas'.

Randy S. Thomas, CVS
Assistant Team Leader

Value Engineering Study Report

Project No. CSSTP-0005-00(905) – P.I. No. 0005905
CSSTP-0006-00(879) – P.I. No. 0006879
CSSTP-0006-00(890) – P.I. No. 0006890

Panola Road Widening and Rehabilitation
DeKalb County

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- Agenda
- Pareto Chart – Cost Model
- FAST Diagram
- Attendance Sheets for Designers and VE Team Presentations
- Creative Idea Listing

Segment 3 consists of improvements to Panola Road from Thompson Mill Road to Fairington Road. The project for this segment is 0.4 miles and design speed is 45 mph. The improvements to this segment includes widening the existing roadway from four 12' lanes to six 12' lanes with 4' bike lanes, 5' sidewalks and a variable 20' to 32' raised median. All crossroad intersections will be improved including approach lane configurations, turn lane lengths, and one proposed new traffic signal. Estimated construction costs for the project are \$7,160,311.



Segment 5 consists of improvements to Panola Road from Snapfinger Woods Drive to Covington Highway. The project length is 1.0 miles and design speed will be 45 mph. Improvements to this section will include widening the existing roadway from four 12' lanes to six 12' lanes with 4' bike lanes, 5' sidewalks, and a variable 20' to 32' raised median. All crossroad intersections will be improved including approach lane configurations, turn lane lengths, and two proposed new traffic signals. Estimated construction costs for this project are \$16,503,307.



All segments of this corridor exceed the state accident rate for similar facilities. The current Right-of-Way cost estimate is \$18,864,806. This project is more fully described in the documentation that is located in the Tabbed section of this report, entitled **Project Description**.

PROJECT CONCERNS AND OBJECTIVES

Some of the information from the concept report and the designer's presentation indicated the following important points about the project:

- Improve safety and reduce accidents on corridor
- Increase capacity
- Improve Level of Service
- Comply with regulations

VALUE ENGINEERING PROCESS

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:

- Investigative
- Analysis
- Speculation
- Evaluation
- Development
- Recommendation
- Presentation

This report is a component of the Presentation Phase. As part of the VE workshop in Atlanta, the team made an informal presentation of their results on the last morning of the workshop. This report is intended to formalize the workshop results and set the stage for a formal implementation meeting in which alternatives and design suggestions will typically be accepted, accepted with modifications, or rejected for cause. The worksheet that follows, along with the formally developed alternatives and design suggestions can be used as a "score sheet" for the implementation meeting. It is also included in this report to identify, on a summary basis, the results of the workshop. The reader is encouraged to visit the third tabbed section of this report entitled **Study Results** for a review of the details of the developed alternatives. The tabbed section **Project Description** includes information about the project itself and the tabbed section **Value Engineering Process** presents the detailed process of the Value Engineering Study.

CONCLUSIONS AND RECOMMENDATIONS

During the speculation phase the VE Team identified **20 Alternative Ideas** that appeared to hold potential for reducing the construction cost, improving the end product, and/or reducing the difficulty and time of project construction. After the evaluation phase was completed, **7 Alternative Ideas and 1 Design Suggestion** remained for further development. These Alternative Ideas may be found, in their documented form, in the section of this report entitled **Study Results**.

The following **Summary of Alternatives and Design Suggestions** coupled with the documentation of the developed alternatives should provide the reader with the information required to fully evaluate the merits of each of the alternatives.

Summary of Alternatives & Design Suggestions



PROJECT: Georgia Department of Transportation CSSTP-0005-00(905) – P.I. No. 0005905 CSSTP-0006-00(879) – P.I. No. 0006879 CSSTP-0006-00(890) – P.I. No. 0006890 Panola Road Widening and Rehabilitation DeKalb County		SHEET NO.: 1 of 1
ALTERNATIVE NUMBER	DESCRIPTION OF ALTERNATIVE	INITIAL COST SAVINGS
	SEGMENT 2 - CSSTP-0006-00(879)	
RD-1	Eliminate median opening at the intersection of Panola Road and Oak Tree Trail	\$14,629
RD-6	Eliminate southbound left turn lane at the intersection of Panola Road and Old Panola Road (Make Old Panola Road Right-In / Right-Out)	\$5,596
RD-8	Extend the Salem Road Westbound Widening to the existing 4-lane section at Salem Hills Drive	(\$174,926)
RD-9	Add capacity to Browns Mill Road	(\$270,507)
RD-10	Signalize the Oak Tree Trail intersection	(\$105,571)
	SEGMENT 3 – CSSTP-0005-00(905)	
RD-11	Delete re-alignment of Fairington Road	\$4,023,539
RD-14	Postpone Panola road widening work between Fairington road and I-20 and include in Segment 4	\$459,226
	SEGMENT 5 – CSSTP-0006-00(890)	
RD-18	Acquire additional Right-of-Way along Covington Highway to accommodate future widening	DS

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**.

**Georgia Department of Transportation
Project No. CSSTP-0006-00(879) – P.I. No. 0006879
DeKalb County**

- Intersection at Panola Road and Browns Bridge Road



- Intersection at Panola Road and Thompson Bridge Road



**Georgia Department of Transportation
Project No. CSSTP-0006-00(879) – P.I. No. 0006879
DeKalb County**

- Intersection at Panola Road and Rock Springs Road



- Intersection at Panola Road and Salem Road



**Georgia Department of Transportation
Project No. CSSTP-0005-00(905) – P.I. No. 0005905
DeKalb County**

- Intersection at Panola Road and West Fairington Parkway



- Intersection at Panola Road and Minola Drive



**Georgia Department of Transportation
Project No. CSSTP-0006-00(890) – P.I. No. 0006890
DeKalb County**

- Intersection at Panola Road and Snapfinger Woods Road



- Panola Road at State Road 12 (Covington Road)



Summary of Alternatives & Design Suggestions



PROJECT: Georgia Department of Transportation CSSTP-0005-00(905) – P.I. No. 0005905 CSSTP-0006-00(879) – P.I. No. 0006879 CSSTP-0006-00(890) – P.I. No. 0006890 Panola Road Widening and Rehabilitation DeKalb County		SHEET NO.: 1 of 1
ALTERNATIVE NUMBER	DESCRIPTION OF ALTERNATIVE	INITIAL COST SAVINGS
	SEGMENT 2 - CSSTP-0006-00(879)	
RD-1	Eliminate median opening at the intersection of Panola Road and Oak Tree Trail	\$14,629
RD-6	Eliminate southbound left turn lane at the intersection of Panola Road and Old Panola Road (Make Old Panola Road Right-In / Right-Out)	\$5,596
RD-8	Extend the Salem Road Westbound Widening to the existing 4-lane section at Salem Hills Drive	(\$174,926)
RD-9	Add capacity to Browns Mill Road	(\$270,507)
RD-10	Signalize the Oak Tree Trail intersection	(\$105,571)
	SEGMENT 3 – CSSTP-0005-00(905)	
RD-11	Delete re-alignment of Fairington Road	\$4,023,539
RD-14	Postpone Panola road widening work between Fairington road and I-20 and include in Segment 4	\$459,226
	SEGMENT 5 – CSSTP-0006-00(890)	
RD-18	Acquire additional Right-of-Way along Covington Highway to accommodate future widening	DS

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Eliminate median opening at the intersection of Panola Road and Oak Tree Trail**

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

Original Design:

The original design provides an un-signalized median opening for the intersection of Panola Road and Oak Tree Trail / Old Panola Road (Big Miller Grove Way).

Alternative:

The alternative would eliminate the median opening at the intersection of Panola Road and Oak Tree Trail / Old Panola Road (Big Miller Grove Way).

Opportunities:

- Improve safety
- Improve operations

Risks:

- Minimal design effort
- Reduced access for residents of Oak Tree Trail

Technical Discussion:

The combination of horizontal and vertical curves, super elevation and a grade in excess of 7% has the potential to significantly impact the safety and operations of the intersection due to limited sight distance and significant grade. Closing the intersection should not significantly impact users and should improve safety for all users.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 60,576	\$ 0	\$ 60,576
ALTERNATIVE	\$ 45,947	\$ 0	\$ 45,947
SAVINGS	\$ 14,629	\$ 0	\$ 14,629

Illustration



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Eliminate median opening at the intersection of Panola
Road and Oak Tree Trail**

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



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Eliminate median opening at the intersection of Panola
Road and Oak Tree Trail**

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

~Station 1048+89.9 to ~Station 1058+40.5

$$\text{Reduced Area of Paving} = [(180+180 / 2) \times (12\text{FT})] / (9 \text{ SF / SY}) = 240.0 \text{ SY}$$

$$= [(310' + 250) \times (12\text{FT})] / (9 \text{ SF / SY}) = 746.7 \text{ SY}$$

$$= (80 \times 20\text{FT}) / (9 \text{ SF / SY}) = 17.8 \text{ SY}$$

$$\text{Total} \Rightarrow 1005 \text{ SY (9045SF)}$$

$$\text{Superpave 12.5mm} = (1005 \text{ SY} \times 165/2000) = 82.9 \text{ TN} \Rightarrow 83\text{TN}$$

$$\text{Superpave 19.0mm} = (1005 \text{ SY} \times 330/2000) = 165.8 \text{ TN} \Rightarrow 166 \text{ TN}$$

$$\text{Superpave 25.0mm} = (1005 \text{ SY} \times 550/2000) = 276.4 \text{ TN} \Rightarrow 277 \text{ TN}$$

$$12'' \text{ GAB} = [(9045\text{SF} \times 1 \text{ FT}) \times (135\# / \text{CF})] / (2000\# / \text{TN}) = 610.5\text{TN} \Rightarrow 611 \text{ TN}$$

Additional Items for the Alternative

$$\text{Curb and Gutter} \Rightarrow 160 \text{ LF}$$

$$4'' \text{ Median Paving} \Rightarrow 1005 \text{ SY}$$

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0006-00(879) - P.I. No. 0006879 Panola Road Widening and Rehabilitation Browns Mill Road to Thompson Mill Road DeKalb County	ALTERNATIVE NO.:	RD-1
DESCRIPTION:	Eliminate median opening at the intersection of Panola Road and Oak Tree Trail	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	83	\$ 90.00	\$ 7,470	0	\$ 90.00	\$ -
19.0 mm Superpave	TN	166	\$ 90.00	\$ 14,940	0	\$ 90.00	\$ -
25.0 mm Superpave	TN	277	\$ 90.00	\$ 24,930	0	\$ 90.00	\$ -
12" GAB	TN	611	\$ 12.65	\$ 7,729	0	\$ 12.65	\$ -
4" Median Paving	SY	0	\$ 38.00	\$ -	1055	\$ 38.00	\$ 40,090
Curb & Gutter	LF	0	\$ 10.50	\$ -	160	\$ 10.50	\$ 1,680
Sub-total				\$ 55,069			\$ 41,770
Mark-up at 10.00%				\$ 5,507			\$ 4,177
TOTAL				\$ 60,576			\$ 45,947

Estimated Savings: \$14,629

Value Analysis Design Alternative



PROJECT: Georgia Department of Transportation
 CSSTP-0006-00(879) – P.I. No. 0006879
 Panola Road Widening and Rehabilitation
 Browns Mill Road to Thompson Mill Road
 DeKalb County

ALTERNATIVE NO.:
RD-6

DESCRIPTION: Eliminate southbound left turn lane at the intersection of
 Panola Road and Old Panola Road (Make Old Panola
 Road Right-In / Right-Out)

SHEET NO.: 1 of 4

Original Design:

The original design provides for an un-signalized left turn (southbound) at the intersection of Panola Road and Old Panola Road (Big Miller Grove Way).

Alternative:

The alternative would eliminate the left turn (southbound) at the Panola Road / Old Panola Road (Big Miller Grove Way) intersection and construct Old Panola Road as it currently exists as a Right-In /Right-Out.

Opportunities:

- Improve safety
- Improve operations

Risks:

- Minimal design effort
- Reduces access for residents of Oak Tree Trail
- Potential for drivers to attempt prohibited left turn / u-turn to access Big Miller Grove Church

Technical Discussion:

The combination of horizontal and vertical curves, super elevation, and a grade in excess of 7% has the potential to significantly impact the safety and operations of the intersection due to limited sight distance and significant grade.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 27,403	\$ 0	\$ 27,403
ALTERNATIVE	\$ 21,806	\$ 0	\$ 21,806
SAVINGS	\$ 5,596	\$ 0	\$ 5,596

Illustration

PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-1

DESCRIPTION: **Eliminate southbound left turn lane at the intersection of
Panola Road and Old Panola Road (Make Old Panola
Road Right-In / Right-Out)**

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



Old Panola Road

Current design provides a left turn bay on Panola Rd going onto Old Panola which presently does not exist. Alternative is to not introduce left turns off Panola onto Old Panola for safety.

Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-6

DESCRIPTION: **Eliminate southbound left turn lane at the intersection of
Panola Road and Old Panola Road (Make Old Panola
Road Right-In / Right-Out)**

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

~Station 1054+19.84 to ~Station 1058+40.5

$$\begin{aligned} \text{Reduced Area of Paving} &= [(180/2) \times (12\text{FT})] / (9 \text{ SF} / \text{SY}) = 120.0 \text{ SY} \\ &= [(250) \times (12\text{FT})] / (9 \text{ SF} / \text{SY}) = 333.3 \text{ SY} \end{aligned}$$

$$\text{Total} \Rightarrow 454 \text{ SY (4086 SF)}$$

$$\text{Superpave 12.5mm} = (454 \text{ SY} \times 165/2000) = 37.5 \text{ TN} \Rightarrow 38 \text{ TN}$$

$$\text{Superpave 19.0mm} = (454 \text{ SY} \times 330/2000) = 74.9 \text{ TN} \Rightarrow 75 \text{ TN}$$

$$\text{Superpave 25.0mm} = (454 \text{ SY} \times 550/2000) = 124.9 \text{ TN} \Rightarrow 125 \text{ TN}$$

$$12'' \text{ GAB} = [(4086 \text{ SF} \times 1 \text{ FT}) \times (135\# / \text{CF})] / (2000\# / \text{TN}) = 275.8 \text{ TN} \Rightarrow 276 \text{ TN}$$

Additional Items for the Alternative

$$4'' \text{ Median Paving} = 454 \text{ SY} + [300 \text{ SF} / (9\text{SF}/\text{SY})] = 487.3 \text{ SY} \Rightarrow 488 \text{ SY}$$

$$\text{Signing} = 4 \text{ EA} \times 16 \text{ SF} \Rightarrow 64 \text{ SF}$$

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0006-00(879) - P.I. No. 0006879 Panola Road Widening and Rehabilitation Browns Mill Road to Thompson Mill Road DeKalb County	ALTERNATIVE NO.:	RD-6
DESCRIPTION:	Eliminate southbound left turn lane at the intersection of Panola Road and Old Panola	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	38	\$ 90.00	\$ 3,420	0	\$ 90.00	\$ -
19.0 mm Superpave	TN	75	\$ 90.00	\$ 6,750	0	\$ 90.00	\$ -
25.0 mm Superpave	TN	125	\$ 90.00	\$ 11,250	0	\$ 90.00	\$ -
12" GAB	TN	276	\$ 12.65	\$ 3,491	0	\$ 12.65	\$ -
4" Median Paving	SY	0	\$ 38.00	\$ -	488	\$ 38.00	\$ 18,544
Signing	SF	0	\$ 20.00	\$ -	64	\$ 20.00	\$ 1,280
Sub-total				\$ 24,911			\$ 19,824
Mark-up at 10.00%				\$ 2,491			\$ 1,982
TOTAL				\$ 27,403			\$ 21,806

Estimated Savings: \$5,596

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-8

DESCRIPTION: **Extend the Salem Road westbound widening to the existing 4-lane section at Salem Hills Drive**

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

Original Design:

The original design tapers back to two lanes at Old Panola Road.

Alternative:

The alternative would widen Salem Road to provide two thru lanes westbound from east of Salem Hills Drive to Panola Road.

Opportunities:

- Improve operations

Risks:

- Minimal design effort
- Additional Right-of-Way

Technical Discussion:

The current alternative design would provide an additional lane for right turns on to Old Panola Road. It will also provide a greater “weave area” for traffic exiting the church and heading west.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 0	\$ 0	\$ 0
ALTERNATIVE	\$ 174,926	\$ 0	\$ 174,926
SAVINGS	\$ -(174,926)	\$ 0	\$ -(174,926)

Illustration



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-8

DESCRIPTION: **Extend the Salem Road westbound widening to the
existing 4-lane section at Salem Hills Drive**

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



Extend Salem Rd southerly to tie-in to existing four lane

Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-8

DESCRIPTION: **Extend the Salem Road Westbound Widening to the
existing 4-lane section at Salem Hills Drive**

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

Increased Area of Paving = $(500\text{FT} \times 12\text{FT}) / (9 \text{ SF} / \text{SY}) = 666.7 \text{ SY} \Rightarrow 667 \text{ SY} (6,000 \text{ SF})$

Superpave 12.5mm = $(667 \text{ SY} \times 165/2000) = 55.0 \text{ TN} \Rightarrow 55 \text{ TN}$

Superpave 19.0mm = $(667 \text{ SY} \times 330/2000) = 110.1 \text{ TN} \Rightarrow 111 \text{ TN}$

Superpave 25.0mm = $(667 \text{ SY} \times 550/2000) = 183.4 \text{ TN} \Rightarrow 184 \text{ TN}$

12" GAB = $[(6,000 \text{ SF} \times 1 \text{ FT}) \times (135\# / \text{CF})] / (2000\# / \text{TN}) \Rightarrow 405 \text{ TN}$

Right of Way

Commercial: $(500 \text{ lf} \times 12' \text{ wide}) = 6,000 \text{ SF}$

Net Cost	$6,000 \text{ SF} \times \$8.00/\text{SF}$	= \$	48,000
Scheduling	55%	= \$	26,400
Administrative	60%	= \$	28,800
Inflation	40%	= \$	19,200
Total		= \$	122,400

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0006-00(879) - P.I. No. 0006879 Panola Road Widening and Rehabilitation Browns Mill Road to Thompson Mill Road DeKalb County	ALTERNATIVE NO.:
DESCRIPTION:	Extend the Salem Road westbound widening to the existing 4-lane section at Salem Hills	RD-8 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	0	\$ 90.00	\$ -	55	\$ 90.00	\$ 4,950
19.0 mm Superpave	TN	0	\$ 90.00	\$ -	111	\$ 90.00	\$ 9,990
25.0 mm Superpave	TN	0	\$ 90.00	\$ -	184	\$ 90.00	\$ 16,560
12" GAB	TN	0	\$ 12.65	\$ -	405	\$ 12.65	\$ 5,123
Right of Way	LS	0	\$ -	\$ -	1	\$ 122,400.00	\$ 122,400
Sub-total				\$ -			\$ 159,023
Mark-up at 10.00%				\$ -			\$ 15,902
TOTAL				\$ -			\$ 174,926

Estimated Savings: (\$174,926)

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-9

DESCRIPTION: **Add capacity to Browns Mill Road**

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

Original Design:

The original design proposes a LOS service for the Browns Mill Road at Panola Road intersection for the design year.

Alternative:

The alternative is to increase the capacity of Browns Mill Road to improve the level of service for the intersection.

Opportunities:

- Improve LOS for the intersection
- Improve capacity on Browns Mill Road

Risks:

- Purchase of some Right-of-Way
- Moderate redesign of Browns Mill Road

Technical Discussion:

The existing design proposes a LOS of F for the design year for the Browns Mill Road at Panola Road intersection. While this project spans to the south of Browns Mill Road, it would be beneficial for the county's access management plan to increase the capacity of Browns Mill Road which may be an important corridor in the future. It may cost to buy the Right-of-Way and construct an additional lane, but it would be a tremendous benefit for future widening.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 465,805	\$ 0	\$ 465,805
ALTERNATIVE	\$ 736,312	\$ 0	\$ 736,312
SAVINGS	\$ -(270,507)	\$ 0	\$ -(270,507)

Illustration

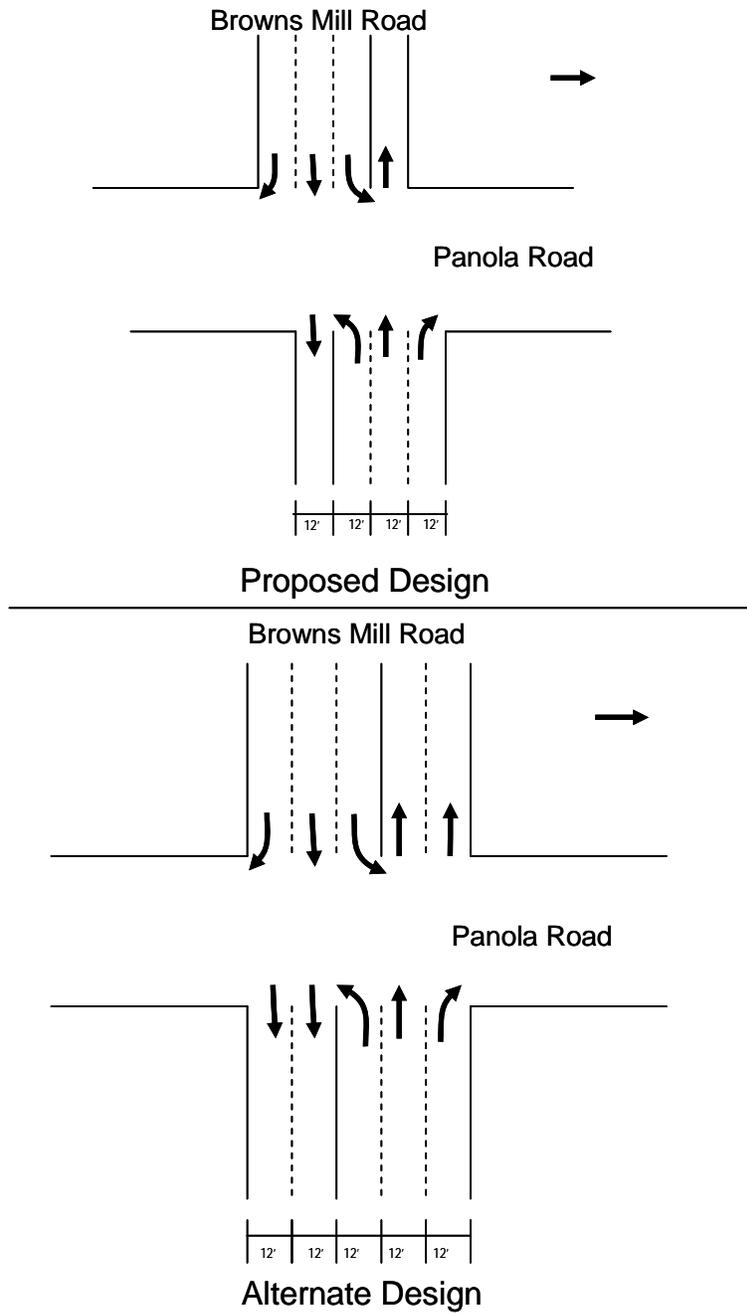


PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-9

DESCRIPTION: **Add capacity to Browns Mill Road**

SHEET NO.: **2 of 4**



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-9

DESCRIPTION: **Add capacity to Browns Mill Road**

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

Original Design

Browns Mill Road (assuming construction from the sub grade all the way up to the surface coarse)

$$\text{Distance} = 1534.86 - 76 = 1458.86 \text{ feet}$$

$$\text{Surface} = (165 * 1458.86 * 48) / (9 * 2000) = 641.89 \text{ TN}$$

$$\text{Binder} = (330 * 1458.86 * 48) / (9 * 2000) = 1283.79 \text{ TN}$$

$$\text{Base} = (550 * 1458.86 * 48) / (9 * 2000) = 2139.66 \text{ TN}$$

$$\text{Aggregate Base} = 1 * 48 * 1458.86 * (130 / 2000) = 4551.64 \text{ TN}$$

Increase in Quantity

Browns Mill Road (assuming construction from the sub grade all the way up to the surface coarse)

Additional of a 12 foot lane along Browns Mill Road

$$\text{Distance} = 1534.86 - 76 = 1458.86 \text{ feet}$$

$$\text{Surface} = (165 * 1458.86 * 60) / (9 * 2000) = 802.37 \text{ TN}$$

$$\text{Binder} = (330 * 1458.86 * 60) / (9 * 2000) = 1604.74 \text{ TN}$$

$$\text{Base} = (550 * 1458.86 * 60) / (9 * 2000) = 2674.57 \text{ TN}$$

$$\text{Aggregate Base} = 1 * 60 * 1458.86 * (130 / 2000) = 5689.55 \text{ TN}$$

$$\text{Additional ROW purchase} = 1458.86 * 12 = 17506.32 \text{ SF}$$

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-10

DESCRIPTION: **Signalize the Oak Tree Trail intersection**

SHEET NO.: **1 of 4**

Original Design:

The original design provides for an un-signalized left turn (southbound) at the intersection of Panola Road and Oak Tree Trail / Old Panola Road (Big Miller Grove Way).

Alternative:

The alternative would signalize the intersection of Panola Road and Oak Tree Trail / Old Panola Road (Big Miller Grove Way) and close the median opening at Cedar Rock Drive making it right-in /right-out.

Opportunities:

- Improve safety
- Improve operations
- Allow platooning of traffic and improved signal coordination

Risks:

- Moderate design effort
- Reduces access for residents of Cedar Rock Drive

Technical Discussion:

The combination of horizontal and vertical curves, super elevation, and a grade in excess of 7% has the potential to significantly impact the safety and operations of the intersection due to limited sight distance and significant grade. Signalization of this intersection and closing the Cedar Rock Drive median opening would provide protected turning movements and allow improved platooning of traffic. It would also provide signalization for all the median openings on Panola Road. Although the signal is not warranted initially due to traffic volume it should qualify under Warrant #6 – Coordinated Signal Systems. It is also recommended that Warrant #7 – Safety be evaluated for this location.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 63,906	\$ 0	\$ 63,906
ALTERNATIVE	\$ 169,477	\$ 0	\$ 169,477
SAVINGS	\$ -(105,571)	\$ 0	\$ -(105,571)

Illustration



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-10

DESCRIPTION: **Signalize the Oak Tree Trail intersection**

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



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0006-00(879) – P.I. No. 0006879
Panola Road Widening and Rehabilitation
Browns Mill Road to Thompson Mill Road
DeKalb County**

ALTERNATIVE NO.:
RD-10

DESCRIPTION: **Signalize the Oak Tree Trail intersection**

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

~Station 1054+19.84 to ~Station 1067+10.00

$$\begin{aligned} \text{Reduced Area of Paving} &= [(180+180 / 2) \times (12\text{FT})] / (9 \text{ SF / SY}) = 240.0 \text{ SY} \\ &= [(350' + 250) \times (12\text{FT})] / (9 \text{ SF / SY}) = 800.0 \text{ SY} \\ &= (90 \times 20\text{FT}) / (9 \text{ SF / SY}) = 20.0 \text{ SY} \end{aligned}$$

$$\text{Total} \Rightarrow 1060 \text{ SY (9540SF)}$$

$$\text{Superpave 12.5mm} = (1060 \text{ SY} \times 165/2000) = 87.5 \text{ TN} \Rightarrow 88 \text{ TN}$$

$$\text{Superpave 19.0mm} = (1060 \text{ SY} \times 330/2000) = 174.9 \text{ TN} \Rightarrow 175 \text{ TN}$$

$$\text{Superpave 25.0mm} = (1060 \text{ SY} \times 550/2000) = 291.5 \text{ TN} \Rightarrow 292 \text{ TN}$$

$$12'' \text{ GAB} = [(9540 \text{ SF} \times 1 \text{ FT}) \times (135\# / \text{CF})] / (2000\# / \text{TN}) = 644.0 \text{ TN} \Rightarrow 644 \text{ TN}$$

Additional Items for the Alternative

$$\text{Curb and Gutter} \Rightarrow 1800 \text{ LF}$$

$$\begin{aligned} 4'' \text{ Median Paving} &= 1060 \text{ SY (Panola Road)} + 50 \text{ SY (Cedar Rock Road, Right-in Right-out)} \\ &\Rightarrow 1110 \text{ SY} \end{aligned}$$

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0006-00(879) - P.I. No. 0006879 Panola Road Widening and Rehabilitation Browns Mill Road to Thompson Mill Road DeKalb County	ALTERNATIVE NO.:	RD-10
DESCRIPTION:	Signalize the Oak Tree Trail intersection	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	88	\$ 90.00	\$ 7,920	0	\$ 90.00	\$ -
19.0 mm Superpave	TN	175	\$ 90.00	\$ 15,750	0	\$ 90.00	\$ -
25.0 mm Superpave	TN	292	\$ 90.00	\$ 26,280	0	\$ 90.00	\$ -
12" GAB	TN	644	\$ 12.65	\$ 8,147	0	\$ 12.65	\$ -
4" Median Paving	SY	0	\$ 38.00	\$ -	1110	\$ 38.00	\$ 42,180
Curb & Gutter	LF	0	\$ 10.50	\$ -	180	\$ 10.50	\$ 1,890
Signals	EA	0	\$ 110,000.00	\$ -	1	\$ 110,000.00	\$ 110,000
Sub-total				\$ 58,097	\$ 154,070		
Mark-up at 10.00%				\$ 5,810	\$ 15,407		
TOTAL				\$ 63,906	\$ 169,477		

Estimated Savings: (\$105,571)

Value Analysis Design Alternative



PROJECT: **Georgia Department of Transportation
CSSTP-0005-00(905) – P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County**

ALTERNATIVE NO.:
RD- 11

DESCRIPTION: **Delete re-alignment of Fairington Road intersection**

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

Original Design:

The original design calls for the re-alignment of Fairington Road at Panola Road intersection.

Alternative:

The alternative is to delete the realignment of this intersection.

Opportunities:

- The future reconstruction of the I-20 Bridge may correct the apparent angle deficiency.
- Reduction in number of parcels to be purchased
- Reduction in administration and legal cost for each parcel
- Affects fewer property owners
- Flexibility for the design of the new bridge

Risks:

- None

Technical Discussion:

The function of the proposed realignment of Fairington road is to improve the intersection angle. The present and proposed design signalizes the intersection. The present planning for this area calls for the widening of the I-20 bridge. This widening will most likely call for the realignment of Panola Road which could improve the Fairington intersection angle, which would negate all construction proposed. The existing situation could be improved by alternative RD-12 without impacting the existing users. Also, the proposed plan calls for the relocation of three major private business and reducing the county tax base. It appears reasonable to not realign Fairington. If desired, the existing right turn radius from Fairington onto Panola could be easily increased and or widened to two turning lanes.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 4,023,539	\$ 0	\$ 4,023,539
ALTERNATIVE	\$ 0	\$ 0	\$ 0
SAVINGS	\$ 4,023,539	\$ 0	\$ 4,023,539

Illustrations



PROJECT: Georgia Department of Transportation
CSSTP-0005-00(905) – P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County

ALTERNATIVE NO.:
RD-11

DESCRIPTION: Delete Realignment of Fairington Road

SHEET NO.: 2 of 4



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0005-00(905) – P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County**

ALTERNATIVE NO.:
RD-11

DESCRIPTION: **Delete Realignment of Fairington Road**

SHEET NO.: **3 of 4**

Fairington Road

Distance = 839.41 feet

Original Design

Roadwork =

Surface = $(165 * 839.41 * 72) / (9 * 2000) = 554$ TN

Binder = $(330 * 839.41 * 36) / (9 * 2000) = 554$ TN

Base = $(550 * 839.41 * 36) / (9 * 2000) = 923.35$ TN

Aggregate Base = $1 * 36 * 839.41 * (130 / 2000) = 1964.21$ TN

Curb and Gutter = 1678.82 LF

Sidewalk = $(839.41 * 10) / 9 = 932.68$ SY

Traffic Control = 0.16 LM

Reduction in Quantity

Roadwork =

Surface = $(165 * 839.41 * 72) / (9 * 2000) = 554$ TN

Binder = $(330 * 839.41 * 36) / (9 * 2000) = 554$ TN

Base = $(550 * 839.41 * 36) / (9 * 2000) = 923.35$ TN

Aggregate Base = $1 * 36 * 839.41 * (130 / 2000) = 1964.21$ TN

Curb and Gutter = 1678.82 LF

Sidewalk = $(839.41 * 10) / 9 = 932.68$ SY

Traffic Control = 0.16 LM

Right-of-Way

3 Commercial of 10 designated for relocation

From Right of Way estimate:

Land - Commercial @ 30% x \$3,524,664 = 1,057,399

Improvements: @ 30% x \$450,000 = 135,000

Relocation @ 30% x 250,000 = 75,000

Damages @ 30% x \$250,000 = 75,000

Sub-total – Net Cost = 1,342,399

Scheduling Contingency @ 55% = 738,319

Admin/court cost @ 60% = 1,248,431

Total Cost = \$3,329,149

Cost Worksheet



PROJECT: Georgia Department of Transportation
CSSTP-0005-00(905) - P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County

ALTERNATIVE NO.:

RD-11

DESCRIPTION: Delete realignment of Fairington Road

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	554	\$ 90.00	\$ 49,860	0	\$ 90.00	\$ -
19 mm Superpave	TN	554	\$ 90.00	\$ 49,860	0	\$ 90.00	\$ -
25 mm Superpave	TN	923	\$ 90.00	\$ 83,102	0	\$ 90.00	\$ -
Aggregate Base	TN	1,964	\$ 12.65	\$ 24,847	0	\$ 12.65	\$ -
Curb and Gutter	LF	1,679	\$ 10.50	\$ 17,628	0	\$ 10.50	\$ -
Sidewalk	SY	933	\$ 25.00	\$ 23,317	0	\$ 25.00	\$ -
Traffic Control	LM	0.16	\$ 500,000.00	\$ 80,000	0	\$ 500,000.00	\$ -
3 Commercial Properties	LS	1	\$ 3,329,149	\$ 3,329,149	0	\$ 3,329,149	\$ -
Sub-total				\$ 3,657,762			\$ -
Mark-up at 10%				\$ 365,776			\$ -
TOTAL				\$ 4,023,539			\$ -

Estimated Savings: \$4,023,539

Value Analysis Design Alternative



PROJECT: Georgia Department of Transportation
 CSSTP-0005-00(905) – P.I. No. 0005905
 Panola Road Widening and Rehabilitation
 Thompson Mill Road to Fairington Road
 DeKalb County

ALTERNATIVE NO.:
RD-14

DESCRIPTION: Postpone Panola Road widening work between
 Fairington Road and I-20 and include in Segment 4

SHEET NO.: 1 of 4

Original Design:

The original design for Panola road from Fairington Road to I-20 includes: the widening of Panola Road and the addition of sidewalks and bike lanes

Alternative Design:

The alternative is to postpone all work for Panola road from Fairington Road to I-20 and include it in the design and construction of the new bridge over I-20

Opportunities:

- May significantly reduce costs for ROW purchase
- May prevent the construction and thence removal of new pavement and sidewalks
- Will significantly reduce current construction amount
- Will provide the designer of the new bridge the opportunity to correct the Panola Road intersection in conjunction with the new bridge construction without constraints for newly constructed existing

Risks:

- This section of the road may cause bottle necking due to the widening on Panola Road
- Prevents continuity in the bike path and sidewalk

Technical Discussion:

The construction of the new bridge in Section 4 over I-20 may significantly impact the current proposed work for Panola road from Fairington Road to I-20. By delaying this work and including in the adjoining project, a significant savings in both time and money should be realized. Also, impacts to the users should be greatly reduced by only having to one construction period instead of two – now and during Section 4 construction.

COST SUMMARY	INITIAL COST	PRESENT WORTH RECURRING COSTS	PRESENT WORTH LIFE-CYCLE COST
ORIGINAL DESIGN	\$ 459,226	\$ 0	\$ 459,226
ALTERNATIVE	\$ 0	\$ 0	\$
SAVINGS	\$ 459,226	\$ 0	459,226

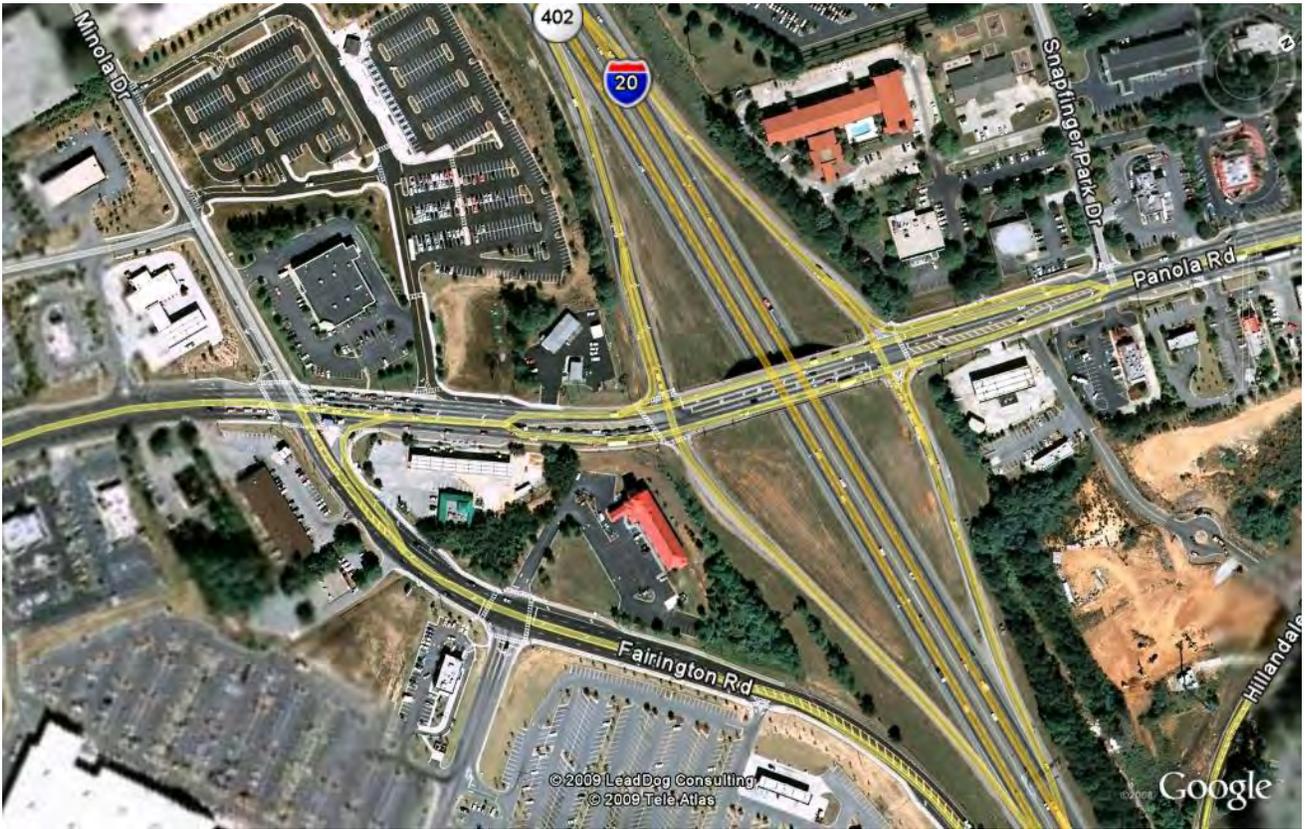
Illustration

PROJECT: Georgia Department of Transportation
CSSTP-0005-00(905) – P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County

DESCRIPTION: Postpone Panola Road widening work between
Fairington Road and I-20 and include in Segment 4

ALTERNATIVE NO.:
RD-14

SHEET NO.: 2 of 4



Calculations



PROJECT: **Georgia Department of Transportation
CSSTP-0005-00(905) – P.I. No. 0005905
Panola Road Widening and Rehabilitation
Thompson Mill Road to Fairington Road
DeKalb County**

ALTERNATIVE NO.:
RD-14

DESCRIPTION: **Postpone Panola Road widening work between
Fairington Road and I-20 and include in Segment 4**

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

From Fairington Road to the Bridge over I-20

Distance = 798 feet

Original Design

Roadwork =

Surface = $(165 * 798 * 104) / (9 * 2000) = 760.76$ TN

Binder = $(330 * 798 * 32) / (9 * 2000) = 468.16$ TN

Base = $(550 * 798 * 32) / (9 * 2000) = 780.27$ TN

Aggregate Base = $1 * 40 * 798 * (130 / 2000) = 2074$ TN

Concrete median = $(24 * 789) / 9 = 2098$ SY

Curb and Gutter = 3192 LF

Sidewalk = $(798 * 10) / 9 = 887$ SY

Traffic Control = 0.15 LM

Reduction in Quantity

Surface = $(165 * 798 * 104) / (9 * 2000) = 760.76$ TN

Binder = $(330 * 798 * 32) / (9 * 2000) = 468.16$ TN

Base = $(550 * 798 * 32) / (9 * 2000) = 780.27$ TN

Aggregate Base = $1 * 40 * 798 * (130 / 2000) = 2074$ TN

Concrete median = $(24 * 789) / 9 = 2098$ SY

Curb and Gutter = 3192 LF

Sidewalk = $(798 * 10) / 9 = 887$ SY

Traffic Control = 0.15 LM

Cost Worksheet



PROJECT:	Georgia Department of Transportation CSSTP-0005-00(905) - P.I. No. 0005905 Panola Road Widening and Rehabilitation Thompson Mill Road to Fairington Road DeKalb County	ALTERNATIVE NO.:
		RD-14
DESCRIPTION:	Postpone Panola Road widening work between Fairington Road and I-20 and include in Segment 4	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	761	\$ 90.00	\$ 68,468	0	\$ 90.00	\$ -
19 mm Superpave	TN	468	\$ 90.00	\$ 42,134	0	\$ 90.00	\$ -
25 mm Superpave	TN	780	\$ 90.00	\$ 70,224	0	\$ 90.00	\$ -
Aggregate Base	TN	2,074	\$ 12.65	\$ 26,236	0	\$ 12.65	\$ -
Concrete Median	SY	2,098	\$ 38.00	\$ 79,724	0	\$ 38.00	\$ -
Curb and Gutter	LF	3,192	\$ 10.50	\$ 33,516	0	\$ 10.50	\$ -
Sidewalk	SY	887	\$ 25.00	\$ 22,175	0	\$ 25.00	\$ -
Traffic Control	LM	0.15	\$ 500,000	\$ 75,000	0	\$ 500,000	\$ -
Sub-total				\$ 417,478			\$ -
Mark-up at 10.00%				\$ 41,748			\$ -
TOTAL				\$ 459,226			\$ -

Estimated Savings: \$459,226

Value Analysis Design Suggestion



PROJECT: Georgia Department of Transportation
CSSTP-0006-00(890) – P.I. No. 0006890
Panola Road Widening and Rehabilitation
Snapfinger Woods Drive to Covington Highway
DeKalb County

ALTERNATIVE NO.:
RD-18

DESCRIPTION: Acquire additional Right-of-Way along Covington Highway to accommodate a future 6-lane divided roadway

SHEET NO.: 1 of 1

Original Design:

The original design makes no provision for the installation of a raised median in the future.

Alternative:

The alternative would provide additional Right-of-Way to allow for future widening to accommodate a raised median. Consideration should also be given to providing the raised medians in the intersection on this project.

Opportunities:

- Avoid multiple acquisitions off the landowners along Covington Highway
- Execute a “protective buy” at a small incremental cost
- Improve access management

Risks:

- Additional Right-of Way cost

Technical Discussion:

By acquiring sufficient property at this time it would prevent future acquisitions off the same parcels. Installing the raised medians would also discourage vehicles from crossing the roadway within the limits of the intersection channelization.



PROJECT DESCRIPTION

INTRODUCTION

This Value Engineering Study encompasses three projects all relating to Panola Road widening and rehabilitation for DeKalb County. The project numbers are:

CSSTP-0005-00(905) – P.I. No. 0005905 (Segment 3)

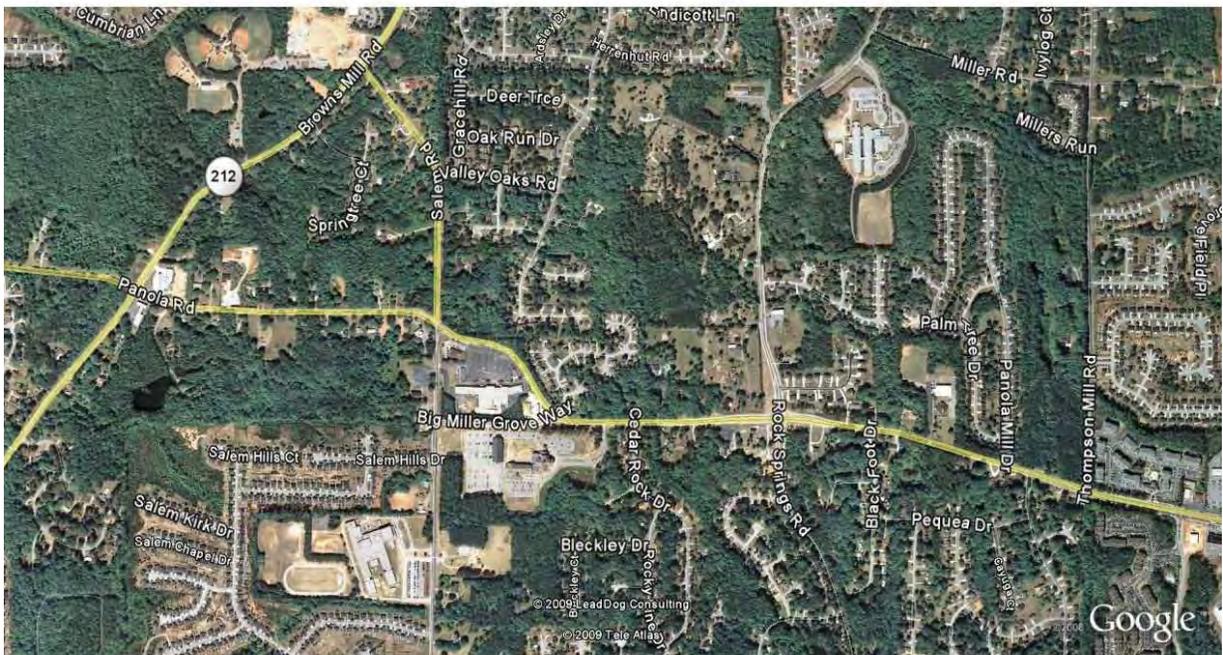
CSSTP-0006-00(879) – P.I. No. 0006879 (Segment 2)

CSSTP-0006-00(890) – P.I. No. 0006890 (Segment 5)

The designer is Arcadis and plans are at the preliminary stage.

The need for the project is to increase the capacity, improve safety, and reduce the number of accidents which currently is above the statewide average for similar facilities. This project is needed to accommodate existing and future traffic demands.

Segment 2 consists of improvements to Panola Road from Browns Mill Road to Thompson Mill Road. The length is 1.7 miles and the projected design speed will be 35 mph. This segment of the Panola Corridor improvement project consists of widening the existing roadway from two 12' lanes to four 12' lanes with 4' bike lanes, 5' sidewalk, and a 20' flush/raised median. All crossroad intersections will be improved including approach lane configurations, turn lane lengths, and one proposed new traffic signal. Three existing traffic signals will need to be replaced. The current VPD is 23,480 and that is expected to increase to 40,800 by 2030. Improvements will allow the corridor to operate at a LOS of B to C in the 2010 build year and a LOS of C to E in 2030. Estimated construction costs for the project are \$18,192,438.



Segment 2

Segment 3 consists of improvements to Panola Road from Thompson Mill Road to Fairington Road. The project for this segment is 0.4 miles and design speed is 45 mph. The improvements to this segment includes widening the existing roadway from four 12' lanes to six 12' lanes with 4' bike lanes, 5' sidewalks and a variable 20' to 32' raised median. All crossroad intersections will be improved including approach lane configurations, turn lane lengths, and one proposed new traffic signal. The four existing traffic signals will be replaced. The current VPD is 27,900 and will increase to 40,080 by the 2030 design year. Improvements to this segment will allow the corridor to operate at a LOS of A to D in the 2010 build year and at a LOS of B to E in the 2030 design year. Estimated construction costs for the project are \$7,160,311.



Segment 3

Segment 5 consists of improvements to Panola Road from Snapfinger Woods Drive to Covington Highway. The project length is 1.0 miles and design speed will be 45 mph. Improvements to this section will include widening the existing roadway from four 12' lanes to six 12' lanes with 4' bike lanes, 5' sidewalks, and a variable 20' to 32' raised median. All crossroad intersections will be improved including approach lane configurations, turn lane lengths, and two proposed new traffic signals. The four existing traffic signals will need to be replaced. The VPD is 34,640 for the 2010 build year and

will increase to 52,020 for the 2030 design year. The LOS for 2010 is C to D and an LOS for 2030 of D to E. Estimated construction costs for this project are \$16,503,307.



Segment 5

All segments of this corridor exceed the state accident rate for similar facilities. Vehicular traffic reports indicate that the increased traffic volume will result in a reduction of safety and increased congestion.

At the time of this study the VE team was provided with a Preliminary Right-of-Way cost estimate of \$18,864,806. This figure is not broken down into the individual segments. It does include the proposed relocation of 10 commercial properties and 6 residential properties as well as required additional Right-of Way (both commercial and residential), easements needed, improvements and damages to properties, as well as contingency fees of 55% and administrative costs of 60%.

REPRESENTATIVE DOCUMENTS

- Georgia Department of Transportation
 - Construction Cost Estimates
 - Preliminary Right-of-Way Cost Estimate
 - Concept Reports
 - Project Location Maps
 - Accident Data

The VE Team utilized the GDOT supplied project materials noted above plus the preliminary plans provided by Arcadis.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: CSSTP-0006-00(879), DeKalb County
Panola Road Corridor Improvements
SR 212 (Browns Mill Road) to Thompson Mill Road
P. I. NO. 0006879

OFFICE: District Seven
Chamblee

DATE: June 26, 2008

FROM: Bryant Poole, District Engineer

TO: Genetha Rice-Singleton., Assistant Director of Preconstruction

SUBJECT: Revised Project Concept Report

Attached is the original copy of the Revised Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

The speed design for Segment 2 – Browns Mill Road to Thompson Mill Road will remain 35 mph. This segment is currently posted for 35 mph. This design change will significantly reduce impacts to businesses and residential properties and utilities along this segment reducing construction cost.

The revised 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: _____

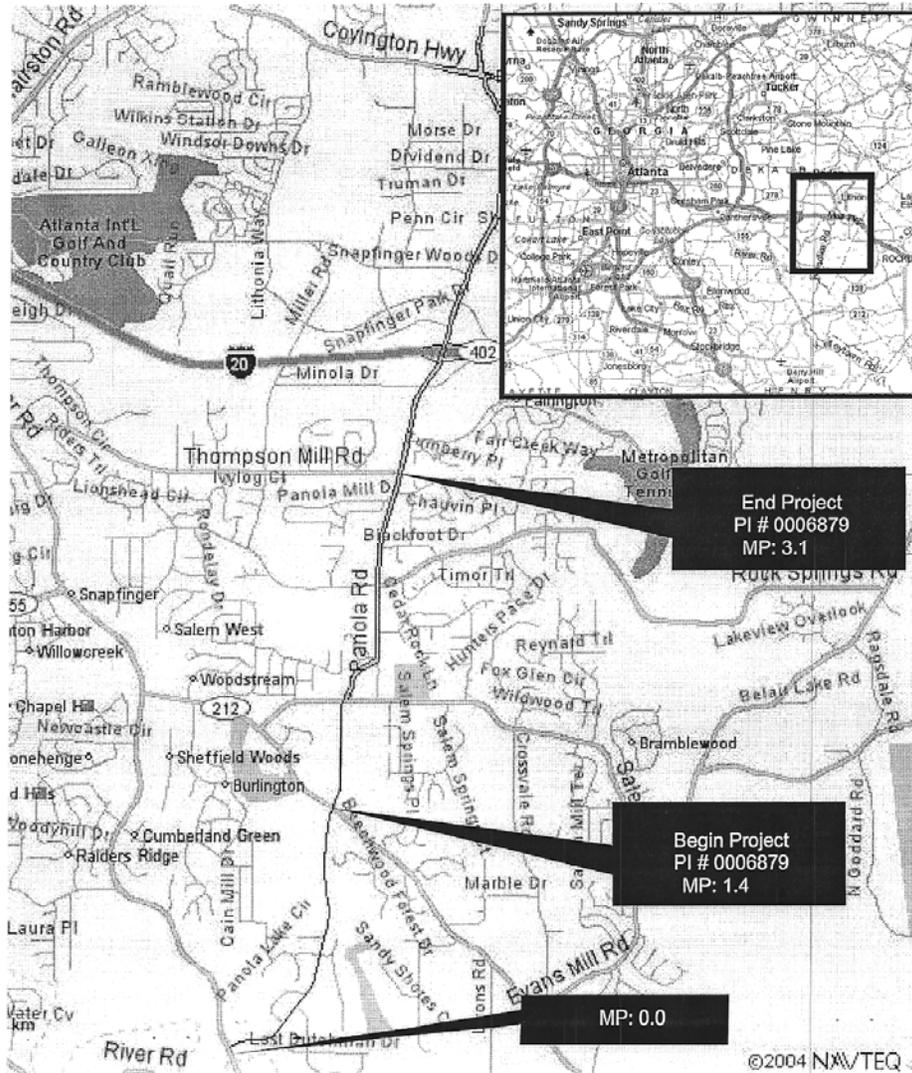
State Transportation Planning Administrator

Distribution:

Brian Summers, P.E.
Glenn S. Bowman, P.E.
Keith Golden, P.E.
Angela T. Alexander
Jamie Simpson

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Project Location Map



REVISED PROJECT CONCEPT REPORT

Need and Purpose:

Introduction

The Panola Road Corridor Improvement project area is located in DeKalb County between Covington Highway and SR 155 (Snapfinger Road). The whole corridor is divided into five project segments. Segment 1 includes Panola Road from SR 155 (Snapfinger Road) to SR 212 (Browns Mill Road); Segment 2 includes Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road; Segment 3 includes Panola Road from Thompson Mill Road to Fairington Road; Segment 4 includes Panola Road from Fairington Road to Snapfinger Woods Drive; Segment 5 includes Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway). This concept report is prepared for segment 2: Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road.

Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road is an urban minor arterial, which provides access to both residential and commercial properties. Along the Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road, the projected 2010 average daily traffic (ADT) is 23,480 vpd and the projected 2030 ADT is 40,800.

The traffic volumes above indicate that the project corridor is experiencing traffic volume increases that will result in a reduction in vehicular safety and increased congestion. The 2005 LOS between the 3 existing signalized intersections within the project corridor are operating between LOS B and C in the a.m. peak hour and at LOS B in the p.m. peak hour. The 2010 no-build LOS is projected to be between LOS B and C in the a.m. peak hour and at LOS C in the p.m. peak hour. The 2030 no-build scenario would operate at LOS F for both the a.m. and p.m. peak hours.

Table 1 provides the historical accident data for Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road. As the table shows, the number of accidents reported along Panola Road for this segment exceeds the average rate shown for similar statewide facilities.

Table 1. Historical Accident Summary

PI # 0006879 (From SR 212 (Browns Mill Road) to Thompson Mill Road) Compared to Statewide Urban Minor Arterials				
Year	2000 ¹	2001 ²	2002 ³	2003 ⁴
Total Accidents	84	67	81	84
Total Injuries	21	19	12	20
Total Fatalities	0	0	0	0
Accident Rate (per 100 mvm)	992	706	936	789
Statewide Accident Rate (per 100 mvm)	660	564	568	568
Percentage of Statewide Average	150%	125%	165%	139%
Injury Rate (per 100 mvm)	248	200	139	188
Statewide Injury Rate (per 100 mvm)	258	218	218	218
Fatality Rate (per 100 mvm)	0	0	0	0
Statewide Fatality Rate (per 100 mvm)	1.44	1.35	1.22	1.22

Note:

2000¹: Accident Data is available only from January to May in 2000. Data were interpolated to December.

2001²: Accident Data is available from January to December in 2001.

2002³: Accident Data is available only from January to April in 2002. Data were interpolated to December

2003⁴: Accident Data is available only from January to May in 2003. Data were interpolated to December. Statewide rates were used for 2003.

Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road currently consists of two 12-foot-wide travel lanes (one in either direction) with no shoulder. The proposed typical section for this segment along Panola Road is four 12-foot-wide travel lanes (two in each direction) with a 20-foot flush/raised center median. This typical section would allow the intersections along Panola Road to function from LOS of B to C in the 2010 build year and LOS C to E in the 2030 design year for peak hour travel times. (The no-build scenarios would operate at LOS F.)

INTERSECTIONS	2005		2010				2030			
	No Build		Build		No Build		Build		No Build	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Panola Road @ Browns Mill Road	AM	C 24.3	C	23.6	C	30.3	E	71.9	F	280.2
	PM	B 17.4	C	22	C	22	F	97.4	F	397.1
Panola Road @ Salem Road	AM	B 15.7	B	20.2	B	19.3	D	35.7	F	146.3
	PM	B 23	B	19	C	34.4	E	64	F	290
Panola Road @ Rock Springs Road	AM	B 19.3	B	20.2	C	25.9	C	27.3	F	243.1
	PM	B 19.1	B	21.6	C	25	D	48.5	F	209.5
Panola Road @ Thompson Mill Road	AM	B 14.8	B	13.8	B	17.4	C	29.6	F	75.7
	PM	B 19.5	B	16.5	C	25.4	C	31.8	F	182.8

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Project location:

The Panola Road project (PI # 0006879) begins at the intersection of SR 212 (Browns Mill Road) and Panola Road and ends at the intersection of Thompson Mill Road and Panola Road. The project length along Panola Road for this segment is 1.7 miles.

Description of the approved concept:

The Panola Corridor improvement project (PI # 0006879) consists of widening existing Panola Road from two 12' lanes to four 12' travel lanes with 4' bike lanes, 5' sidewalk, and a 20' flush/raised median. All crossroad intersections will be improved based on design year traffic data with improvements to approach lane configurations and turn lane lengths. Roadway widening will normally be symmetrical about existing centerlines, though asymmetrical widening will be performed where factors such as utility impacts, right of way restrictions, or geometric restrictions dictate.

PDP Classification: Major

Federal Oversight: Full Oversight (), Exempt(X), SF(), Other ()

Functional Classification: Urban Minor Arterial

U. S. Route Number(s): None **State Route Number(s):** None

Traffic (AADT) as shown in the approved concept:

Current Year: (2010) 23,480 vpd

Design Year: (2030) 40,800 vpd

Proposed features to be revised:

Controlling Criteria – *In the approved concept, The proposed speed design for Segment 2 - Browns Mill Road to Thompson Mill Road was going to be increased to 45 mph from the current speed design of 35 mph.*

Describe the revised feature(s) to be approved:

Controlling Criteria – *The speed design for Segment 2 – Browns Mill Road to Thompson Mill Road will remain 35 mph as currently posted. During the preliminary design process, it was identified that increasing the speed design to 45 mph would have significant impacts to the business and residential properties and utilities along this segment.*

Updated traffic data (AADT): Same as Approved Concept

Current Year: (2010) 23,480 vpd

Design Year: (2030) 40,800 vpd

Programmed/Schedule:

P.E. 2008

R/W: 2010

Construction: 2012

VE Study Required:

Yes()

No()

Revised cost estimate:

1. Construction cost including E&C
2. Right of Way, and
3. Utilities

Is the project located in a Non-attainment area? **Yes** **No.** Concept is consistent with the model which proposes a connection between existing Lithonia Industrial Blvd and Evans Mill Road

Recommendation: It is recommended that the proposed revisions to the concept be approved for implementation.

Attachments:

1. Sketch Map,
2. Cost Estimate,

• **Exempt projects**

Concur: _____
Director of Preconstruction

Approve: _____
Chief Engineer

PRELIMINARY COST ESTIMATE

PROJECT: PANOLA ROAD CORRIDOR – SEGMENT 2
 STP-0006-00(879)
 SR 212 (Browns Mill Road) to Thompson Mill Road

COUNTY: DeKALB

DATE: May 5, 2009

ESTIMATED LETTING DATE:

PREPARED BY: ARCADIS
 PROJECT LENGTH: 1.7 mi mainline, 0.8 mi side road

PROGRAMMING PROCESS CONCEPT DEVELOPMENT DURING PROJECT DEV.

PROJECT COST		
A. RIGHT-OF-WAY:		
1. PROPERTY (Req'd R/W);		\$ 0
2. PROPERTY (Easement);		\$ 0
3. DISPLACEMENTS		\$ 0
4. OTHER COST (ADM./COST, INFLATION)		\$ 0
	SUBTOTAL: A	\$ 0
B. REIMBURSABLE UTILITIES:		
1. RAILROAD		\$ 0
2. POWER LINES 10 minor struct. @ \$10,000/ea, 13 major struct. @ \$100,000/ea, 6400 lf power line @ \$5/lf		\$ 1,132,000
3. SERVICES EST.		\$ 120,000
	SUBTOTAL: B	\$ 1,252,000
C. CONSTRUCTION:		
1. MAJOR STRUCTURES		
a. RETAINING WALLS	21,900 sf @ \$50/sf	\$ 1,095,000
b. BRIDGES	0 sf @ \$100/sf	\$ 0
c. DETOUR BRIDGES	0 sf @ \$75/sf	\$ 0
d. BOX CULVERTS	200 lf @ \$420/lf	\$ 84,000

PROJECT COST		
5. MISCELLANEOUS:		
a. LIGHTING	\$100,000/mi x 1.73 mi	\$ 173,000
b. SIGNING – STRIPING	\$40,000/mi x 2.57 mi	\$ 102,800
c. GUARDRAIL	(2,000 lf x \$11/lf)	\$ 22,000
d. MEDIAN BARRIER	N/A	\$ 0
		SUBTOTAL: C-5
6. SIGNAL MODIFICATION: 4 New Signals @ \$110,000 ea Fiberoptic - \$150,000 x 1.73 mi		SUBTOTAL: C-6
		\$ 699,500

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		
		\$
B. REIMBURSABLE UTILITIES (No Reimbursements)		
		\$ 1,252,000
C. CONSTRUCTION		
1. MAJOR STRUCTURES		\$ 1,179,000
2. GRADING AND DRAINAGE		\$ 2,940,972
3. BASE AND PAVING		\$ 8,620,948
4. LUMP ITEMS		\$ 1,576,760
5. MISCELLANEOUS		\$ 297,800
6. SIGNAL MODIFICATION		\$ 699,500
SUBTOTAL CONSTRUCTION COST		\$ 16,288,883
INFLATION		\$
E. & C. (4%) Major Widening		\$ 651,555
NUMBER OF YEARS		
CONSTRUCTION COST		\$ 16,940,438
TOTAL CONSTRUCTION COST		
		\$ 18,192,438

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**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 7

PROJECT CONCEPT REPORT

Project Number: STP-0005-00(905)

County: DeKalb
P. I. Number: 0005905

Federal Route Number: N/A
State Route Number: N/A

**Panola Road Corridor Improvements –
Thompson Mill Road to Fairington Road**
Description: Corridor improvement of Panola Road.

Recommendation for approval:

DATE _____
Project Manager

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

DATE _____
State Transportation Planning Administrator

DATE _____
Office of Financial Management Administrator

DATE _____
State Environmental/Location Engineer

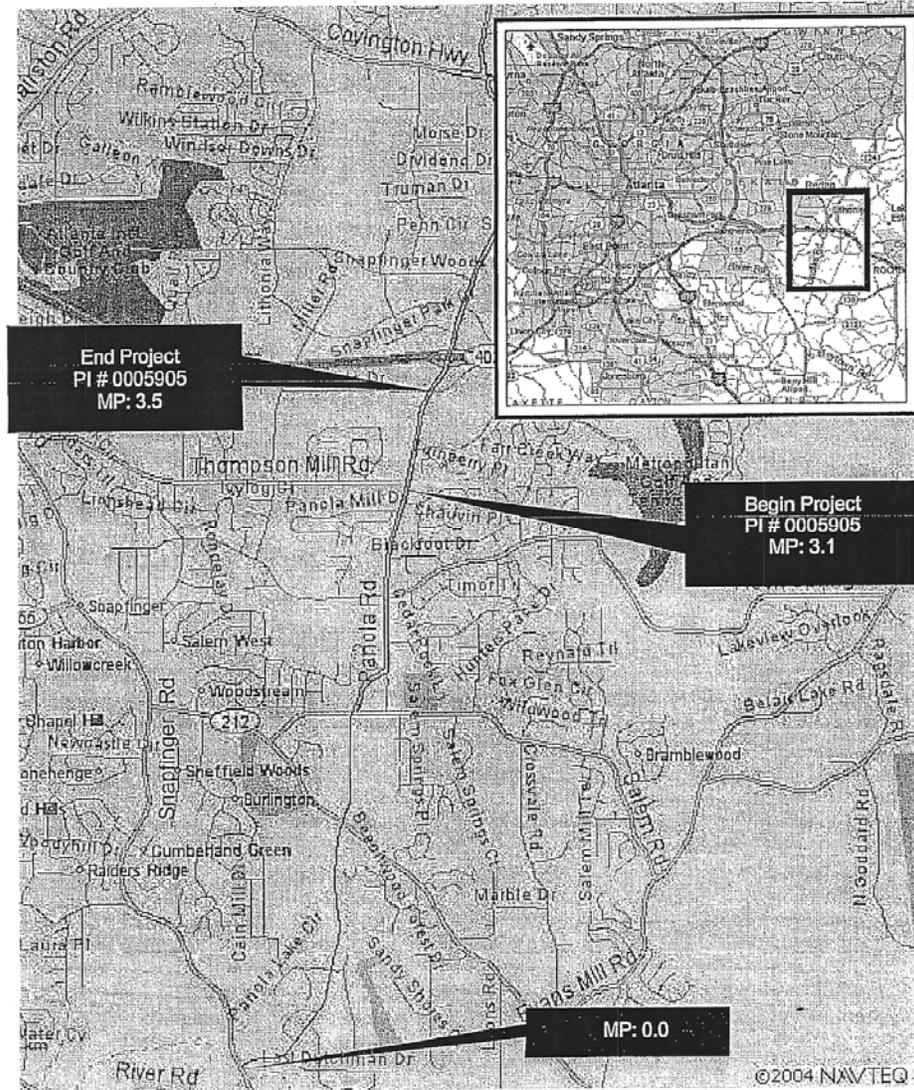
DATE _____
State Traffic Safety & Design Engineer

DATE _____
District Engineer

DATE _____
Project Review Engineer

Project Concept Report Page 2
Project Numbers: STP-0005-00(905)
P. I. Numbers: 0005905
County: DeKalb

Project Location Map Not to Scale



Project Concept Report Page 3
Project Numbers: STP-0005-00(905)
P. I. Numbers: 0005905
County: DeKalb

Need and Purpose:

The Panola Road Corridor Improvement project area is located in DeKalb County between Covington Highway and SR 155 (Snapfinger Road). The whole corridor is divided into five project segments. Segment 1 includes Panola Road from SR 155 (Snapfinger Road) to SR 212 (Browns Mill Road); Segment 2 includes Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road; Segment 3 includes Panola Road from Thompson Mill Road to Fairington Road; Segment 4 includes Panola Road from Fairington Road to Snapfinger Woods Drive; Segment 5 includes Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway). This concept report is prepared for segment 3: Panola Road from Thompson Mill Road to Fairington Road.

Panola Road is an urban minor arterial, which provides access to both residential and commercial properties. Along Panola Road from Thompson Mill Road to Fairington Road, the projected 2010 average daily traffic (ADT) is 27,900 vpd and the projected 2030 ADT is 48,080 vpd.

The traffic volumes above indicate that the project corridor is experiencing traffic volume increases that will result in a reduction in vehicular safety and increased congestion. The 2005 LOS between the 2 signalized intersections within the project corridor are operating at LOS B and LOS D in AM peak hour and also in the PM peak hour. The 2010 no-build LOS is projected to be from LOS B to LOS D in the a.m. peak hour and from LOS C to LOS E in the p.m. peak hour. The 2030 no-build scenario would operate at LOS E and LOS F in the a.m. and LOS F in the p.m. peak hours. There are two major unsignalized intersections located at Panola Road and West Fairington Parkway and at the Lowe's/Publix driveway. The unsignalized intersections are operating at LOS D in 2005 AM and PM peak hour and are projected to generate significantly high delays (LOS F) in the 2010 and 2030 no-build scenario.

Table 1 provides the historical accident data for Panola Road from Thompson Mill Road to Fairington Road. As the table shows, the number of accidents and injuries reported along Panola Road for this segment greatly exceed the average rates shown for similar statewide facilities.

Project Concept Report Page 4
 Project Numbers: STP-0005-00(905)
 P. I. Numbers: 0005905
 County: DeKalb

Table 1. Historical Accident Summary

PI # 0005905 (From SR 155 (Snapfinger Road) to Fairington Road) Compared to Statewide Minor Arterial				
Year	2000 ¹	2001 ²	2002 ³	2003 ⁴
Total Accidents	78	66	63	92
Total Injuries	24	20	12	28
Total Fatalities	0	0	0	0
Accident Rate (per 100 mvm)	2261	1853	1758	2552
Statewide Accident Rate (per 100 mvm)	660	564	568	568
Percentage of Statewide Average	343%	329%	310%	449%
Injury Rate (per 100 mvm)	696	561	335	777
Statewide Injury Rate (per 100 mvm)	258	218	218	218
Fatality Rate (per 100 mvm)	0	0	0	0
Statewide Fatality Rate (per 100 mvm)	1.44	1.35	1.22	1.22

Note:

2000¹: Accident Data is available only from January to May in 2000. Data were interpolated to December.

2001²: Accident Data is available from January to December in 2001.

2002³: Accident Data is available only from January to April in 2002. Data were interpolated to December

2003⁴: Accident Data is available only from January to May in 2003. Data were interpolated to December. Statewide rates were used for 2003.

Panola Road from Thompson Mill Road to Fairington Road currently consists of a four-lane section with a flush median. The proposed typical section for this segment along Panola Road is six 12-foot-wide travel lanes (three in each direction) with a variable width raised center median. This typical section would allow the four signalized intersections (two existing and two proposed) along Panola Road (from Thompson Mill Road to Fairington Road) to function between LOS of A to LOS D in the 2010 build year and between LOS B to LOS E in the 2030 design year for peak hour travel times. (The no-build scenarios would operate at LOS F.)

Project Concept Report Page 5
 Project Numbers: STP-0005-00(905)
 P. I. Numbers: 0005905
 County: DeKalb

INTERSECTIONS		2005		2010				2030			
		No Build		Build		No Build		Build		No Build	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Panola Road @ Thompson Mill Road	AM	B	14.8	B	13.8	B	17.4	C	29.6	F	75.7
	PM	B	19.5	B	16.5	C	25.4	C	31.8	F	182.8
Panola Road @ West Fairington Pkwy	AM	D*	29.3*	B	11.9	F*	62.1*	C	23.4	F*	521.8*
	PM	D*	30.7*	A	8.1	F*	61.9*	B	17.6	F*	182*
Panola Road @ Publix Driveway/ Lowe's	AM	**	**	A	9.4	**	**	B	10.8	**	**
	PM	**	**	A	9.5	**	**	B	11.4	**	**
Panola Road @ Minola Drive	AM	D	38.9	D	39.9	D	51.6	E	62.3	F	229.8
	PM	D	47.7	C	33.3	E	65.3	E	66.3	F	357.5

* The no build condition of this intersection is unsignalized
 ** This intersection is planned for construction in 2005

Description of the proposed project: The Panola Road project (PI # 0005905) begins at the intersection of Thompson Mill Road and Panola Road and ends at the intersection of Fairington Road and Panola Road. The project length along Panola Road for this segment is 0.4 miles.

The Panola Corridor improvement project (PI # 0005905) consists of widening Panola Road from its existing four 12' lane section to a six 12' lane section with 4' bike lanes, 5' sidewalk, and a variable 20' to 32' raised median. All crossroad intersections will be improved based on design year traffic data with improvements to approach lane configurations and turn lane lengths. Roadway widening will normally be symmetrical about existing centerlines, though asymmetrical widening will be performed where factors-such as utility impacts, right of way restrictions, or geometric restrictions dictate.

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

STP-0005-00(905) proposed concept of widening Panola Road from four lanes to six lanes from Thompson Mill Road to Fairington Road is consistent with the regional transportation model. It is anticipated that this project will be open to traffic in 2010.

PDP Classification: Major, Existing

Federal Oversight: Full Oversight (), Exempt (X), State Funded(), or Other ()

Functional Classification: Urban Minor Arterial

Project Concept Report Page 6
Project Numbers: STP-0005-00(905)
P. I. Numbers: 0005905
County: DeKalb

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

Traffic (AADT):

Current Year (2010): 27,900 vpd Design Year (2030): 48,080 vpd

Existing design features:

- Typical Section: 4 – 12' lanes, 12' to 32' flush median, 24" curb & gutter with 5' sidewalks
- Posted speed: 45 mph
- Minimum radius: 1750 ft.
- Maximum grade: 15%
- Width of right of way: 100 -120 ft.
- Major structures: None
- Major interchanges or intersections along the project: Panola Road @ Thompson Mill Road, Panola Road @ Fairington Road, Panola Road @ West Fairing Parkway, Panola Road @ Publix/Lowe's Driveway.
- Existing length of roadway segment:
 - Mainline: 0.4 miles
 - Side Street: 0.5 miles

Proposed Design Features:

- Proposed typical section(s):
 - 6 – 12' Lane Urban Section
 - 20' to 32' raised median, 4' bike lanes, 24" curb and gutter, 5' sidewalk with 2' grass strip. Left and right auxiliary turn lanes at major intersections.
- Proposed Design Speed Mainline: 45 mph
- Proposed Maximum Grade Mainline: -9.00% Maximum Grade Allowable: 9.00%
- Proposed Maximum Grade Side Street: 15% Maximum Grade Allowable: 9.00%.
- Proposed Maximum Grade Driveway:
 - Residential: 27% if Fill, 28% in cut (w/10' vertical curve)
 - Commercial: 11% Fill and Cut
- Proposed Minimum radius: 1750 ft.

- Right of Way
 - Width: Varies 140 feet to 150 feet
 - Easements: Temporary (X), Permanent (), Utility (), Other ().
 - Type of access control: Full (), Partial (X), By Permit (), Other ().
 - Number of parcels: 18 Number of displacements:
 - Business: 4
 - Residences: 0
 - Mobile homes: 0
 - Other: 0

- Structures:
 - Bridges: None
 - Retaining walls: various locations, all below 20' tall

- Major intersections and interchanges: Panola Road @ Thompson Mill Road, Panola Road @ Fairington Road, Panola Road @ West Fairing Parkway, Panola Road @ Publix/Lowe's Driveway.

- Traffic control during construction: Staged construction; traffic will be maintained at all times during construction.

• 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)

As the vertical profile of side streets is developed during the design effort and as the project moves through the NEPA process, a more accurate assessment of the need for design exceptions for vertical grades and stopping sight distance will be evaluated.

- Design variances: None
- Environmental concerns: Underground storage tanks
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (), No (X)

Project Concept Report Page 8
Project Numbers: STP-0005-00(905)
P. I. Numbers: 0005905
County: DeKalb

- Categorical Exclusion (),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (X) or
 - Environmental Impact Statement (EIS) ()
- Utility involvements: The following have possible utilities located within the project limits:
 - Atlanta Gas Light Company
 - BellSouth Telecommunications
 - Georgia Power
 - M.E.A.G.
 - DeKalb County Public Works Water and Sewer Division\
 - Comcast
 - (Others to be determined)

Project responsibilities:

- Design: DeKalb County
- Right of Way Acquisition: DeKalb County
- Relocation of Utilities: DeKalb County
- Letting to contract: GDOT
- Supervision of construction: GDOT
- Providing material pits: N/A
- Providing detours- N/A

Coordination

- Initial concept meeting date: N/A
- Concept meeting date: Sept. 20, 2005
- PAR meetings, dates and results: TBD
- FEMA, USCG, and/or TVA: TBD
- Public involvement: PHOH to be held.
- Local government comments: None to date
- Other projects in the area:
 - STP-0006-00(880) (PI #0006880) Panola Road Segment 1
 - STP-0006-00(879) (PI #0006879) Panola Road Segment 2
 - NHS-0002-00(868) (PI #0002868) Panola Road Segment 4
 - STP-0006-00(890) (PI #0006890) Panola Road Segment 5
 - NHS-0000-00(715) (PI #0000715) I-20 HOV
- Other coordination to date: None to date
- Railroads: None

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 18 Months.
- Time to complete preliminary construction plans: 6 Months.
- Time to complete right of way plans: 3 Months.
- Time to complete the Section 404 Permit: 6 Months.
- Time to complete final construction plans: 3 Months.

Project Concept Report Page 9
Project Numbers: STP-0005-00(905)
P. I. Numbers: 0005905
County: DeKalb

- Time to complete to purchase right of way: 18 Months.
- List other major items that will affect the project schedule: Utilities: 18 Months.

Other alternates considered:

1. No build – The purpose of this project is to improve traffic capacity and to meet future volume demands. This option would not accomplish this purpose.
2. Improvements to intersections – Improve selected intersections to facilitate operation. This option would require addition of lanes within the areas of intersections to operate at a reasonable LOS, which negates efforts to minimize corridor impacts and presents problems with adding/dropping lanes between intersections.

Comments:

Attachments:

1. Cost Estimates:
 - a. Right of way
 - b. Utilities
 - c. Construction including E&C and Inflation
2. Typical sections
3. Concept Team Meeting Minutes

PRELIMINARY COST ESTIMATE

PROJECT: PANOLA ROAD CORRIDOR – SEGMENT 3
 STP-0005-00(905)
 Thompson Mill Road to Fairington Road

COUNTY: DeKALB

DATE: December 1, 2008

ESTIMATED LETTING DATE:

PREPARED BY: ARCADIS
 PROJECT LENGTH: 0.4 mi mainline, 0.5 mi side road

PROGRAMMING PROCESS
 DEV.

CONCEPT DEVELOPMENT

DURING PROJECT

PROJECT COST		
A. RIGHT-OF-WAY:		
1. PROPERTY (Req'd R/W);		\$ 0
2. DISPLACEMENTS		\$ 0
3. OTHER COST (ADM./COST, INFLATION)		\$ 0
SUBTOTAL: A		\$ 0
B. REIMBURSABLE UTILITIES:		
1. RAILROAD		\$ 0
2. TRANSMISSION LINES 20 minor struct. @ \$10,000/ea, 6 major struct. @ \$100,000/ea, 5880 lf power line @ \$5/lf		\$ 829,400
3. SERVICES EST.		\$ 100,000
SUBTOTAL: B		\$ 929,400
C. CONSTRUCTION:		
1. MAJOR STRUCTURES		
a. RETAINING WALLS 800 sf @ \$50/sf		\$ 40,000
b. BRIDGES 0 sf @ \$100/sf		\$ 0
c. DETOUR BRIDGES 0 sf @ \$75/sf		\$ 0
d. BOX CULVERTS 0 lf @ \$420/lf		\$ 0
SUBTOTAL: C-1		\$ 40,000

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PROJECT COST			
2. GRADING AND DRAINAGE:			
a. EARTHWORK	grading complete, EST		\$ 1,000,000
b. DRAINAGE:			
1) Cross Drain Pipe	3 ea @ \$3200/ea (1 per 700', 4 In section) 4 ea @ \$4100/ea (1 per 700', 6 In section)		\$ 26,000
2) Curb and Gutter	8,992 lf @ \$10.50/sf		\$ 94,416
3) Longitudinal System	0.85 mi @ \$200,000/mi		\$ 170,000
SUBTOTAL: C-2			\$ 1,290,416
3. BASE AND PAVING:			
a. AGGREGATE BASE	43,172 Tons x \$12.65/Ton		\$ 546,126
b. ASPHALT PAVING: Surface	4,221 Tons x	\$ 90	\$ 379,890
Binder	11,257 Tons x	\$ 82	\$ 923,074
Base	14,071 Tons x	\$ 75	\$ 1,055,325
Price Adjustment (using APL of \$355)			\$ 629,394
c. CONCRETE MEDIAN	4191 sy @ 38.00/sy		\$ 159,258
d. SIDEWALK	4,996 sy @ \$25.00/sy		\$ 124,900
e. OTHER: TACK	(12,280 x \$.85\gal)		\$ 10,438
SUBTOTAL: C-3			\$ 3,828,405
4. LUMP ITEMS:			
a. TRAFFIC CONTROL	\$500,000/mi x 0.85 mi		\$ 425,000
b. CLEARING AND GRUBBING	\$6,000/ac x 5.99 ac		\$ 35,940
c. LANDSCAPING	N/A		\$ 0
d. EROSION CONTROL	\$80,000/mi x 0.85 mi		\$ 68,000
e. DETOURS	N/A		\$ 0
SUBTOTAL: C-4			\$ 528,940

PROJECT COST		
5. MISCELLANEOUS:		
a. LIGHTING	\$100,000/mi x 0.85 mi	\$ 85,000
b. SIGNING – STRIPING	\$40,000/mi x 0.85 mi	\$ 34,000
c. GUARDRAIL	(500 lf x \$11/lf)	\$ 5,500
d. MEDIAN BARRIER	N/A	\$ 0
		SUBTOTAL: C-5
6. SIGNAL MODIFICATION: 1 New Signals @ \$110,000 ea Fiberoptic - \$150,000 x 0.46 mi		SUBTOTAL: C-6
		\$ 179,000

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		
	\$	0
B. REIMBURSABLE UTILITIES <i>(No Reimbursements)</i>		
	\$	929,400
C. CONSTRUCTION		
1. MAJOR STRUCTURES	\$	40,000
2. GRADING AND DRAINAGE	\$	1,290,416
3. BASE AND PAVING	\$	3,828,405
4. LUMP ITEMS	\$	528,940
5. MISCELLANEOUS	\$	124,500
6. SIGNAL MODIFICATION	\$	179,000
SUBTOTAL CONSTRUCTION COST		\$ 5,991,261
INFLATION		\$
E. & C. (4%)		\$ 239,650
NUMBER OF YEARS		
CONSTRUCTION COST		\$ 6,230,911
TOTAL CONSTRUCTION COST		
		\$ 7,160,311

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(890)

County: DeKalb
P. I. Number: 0006890

Federal Route Number: N/A
State Route Number: N/A

**Panola Road Corridor Improvements –
Snapfinger Woods Drive to SR 12 (Covington Highway)**
Description: Corridor improvement of Panola Road.

Recommendation for approval:

DATE _____
Project Manager

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

DATE _____
State Transportation Planning Administrator

DATE _____
Office of Financial Management Administrator

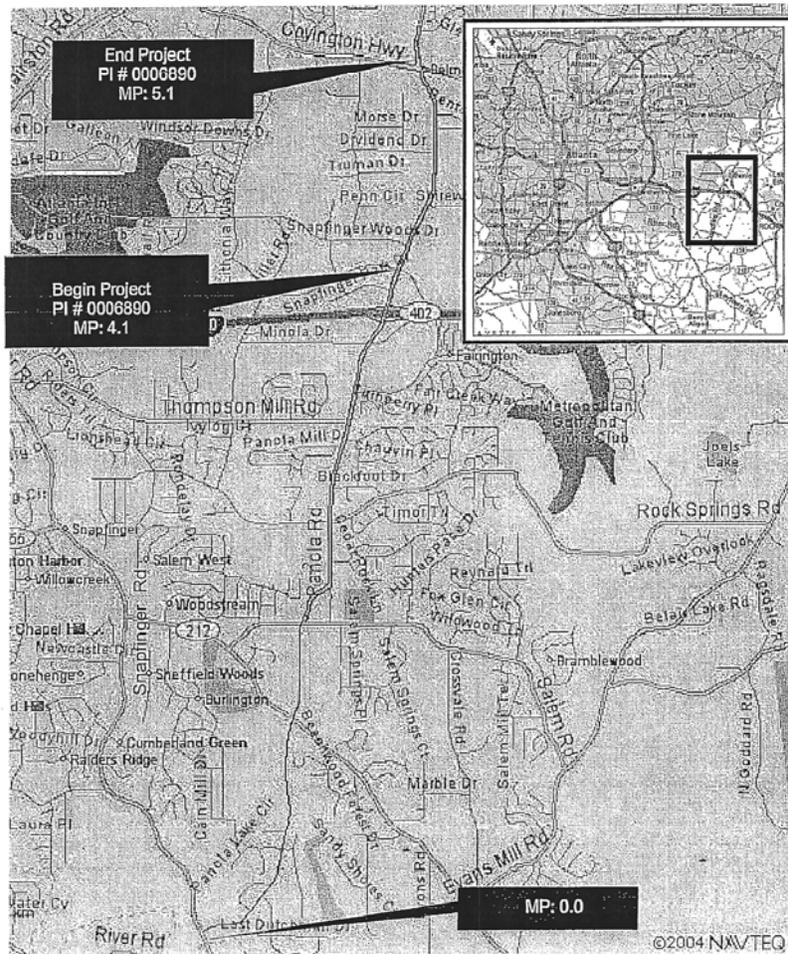
DATE _____
State Environmental/Location Engineer

DATE _____
State Traffic Safety & Design Engineer

DATE _____
District Engineer

DATE _____
Project Review Engineer

Project Location Map Not to Scale



Project Concept Report Page 3
Project Numbers: STP-0006-00(890)
P. I. Numbers: 0006890
County: DeKalb

Need and Purpose:

The Panola Road Corridor Improvement project area is located in DeKalb County between Covington Highway and SR 155 (Snapfinger Road). The whole corridor is divided into five project segments. Segment 1 includes Panola Road from SR 155 (Snapfinger Road) to SR 212 (Browns Mill Road); Segment 2 includes Panola Road from SR 212 (Browns Mill Road) to Thompson Mill Road; Segment 3 includes Panola Road from Thompson Mill Road to Fairington Road; Segment 4 includes Panola Road from Fairington Road to Snapfinger Woods Drive; Segment 5 includes Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway). This concept report is prepared for segment 5: Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway).

Panola Road is an urban minor arterial, which provides access to both residential and commercial properties and access to I-20. Along Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway), the projected 2010 average daily traffic (ADT) is 34,640 vpd and the projected 2030 ADT is 52,020 vpd.

The traffic volumes above indicate that the project corridor is experiencing traffic volume increases that will result in a reduction in vehicular safety and increased congestion. The 2005 LOS between the two existing signalized intersections within the project corridor are operating at LOS C in the a.m. peak hour from LOS C to LOS E in the p.m. peak hour. The 2010 no-build LOS is projected to be from LOS E to LOS D in the a.m. peak hour and LOS E to LOS F in the p.m. peak hour. The 2030 no-build scenario would operate at LOS F for both the a.m. and p.m. peak hours at these two signalized intersections.

Table 1 provides the historical accident data for Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway). As the table shows, the number of accidents and injuries reported along Panola Road for this segment greatly exceed the average rates shown for similar statewide facilities.

Table 1. Historical Accident Summary

PI # 0006890 (From Snapfinger Woods Road to Covington Highway) Compared to Statewide Urban Minor Arterial				
Year	2000 ¹	2001 ²	2002 ³	2003 ⁴
Total Accidents	96	131	108	145
Total Injuries	21	45	36	42
Total Fatalities	0	0	0	0
Accident Rate (per 100 mvm)	905	1196	954	1247
Statewide Accident Rate (per 100 mvm)	660	564	568	568
Percentage of Statewide Average	137%	212%	168%	220%
Injury Rate (per 100 mvm)	198	411	318	361
Statewide Injury Rate (per 100 mvm)	258	218	218	218
Fatality Rate (per 100 mvm)	0	0	0	0
Statewide Fatality Rate (per 100 mvm)	1.44	1.35	1.22	1.22

Note:

2000¹: Accident Data is available only from January to May in 2000. Data were interpolated to December.

2001²: Accident Data is available from January to December in 2001.

2002³: Accident Data is available only from January to April in 2002. Data were interpolated to December

2003⁴: Accident Data is available only from January to May in 2003. Data were interpolated to December. Statewide rates were used for 2003.

Panola Road from Snapfinger Woods Drive to SR 12 (Covington Highway) currently is a four-lane section consisting of four 12-foot-wide travel lanes (two in each direction) with a center turn lane. The proposed typical section for this segment along Panola Road is a six-lane section (three in each direction) separated by a variable width flush/raised center median. This typical section would allow the intersections along Panola Road to function from LOS of C to D in the 2010 build year and LOS D to E in the 2030 design year for peak hour travel times. (The no-build scenarios would operate at LOS F.)

Project Concept Report Page 5
 Project Numbers: STP-0006-00(890)
 P. I. Numbers: 0006890
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INTERSECTIONS		2005		2010				2030			
		No Build		Build		No Build		Build		No Build	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Panola Road @ Snapfinger Woods Dr.	AM	C	31.7	C	31.8	E	68.2	D	38.3	F	251.6
	PM	C	30.3	D	39.3	E	64.9	E	65.1	F	317.6
Panola Road @ SR 12 (Covington Road)	AM	C	35.6	C	32.7	D	49.7	D	52.7	F	190.9
	PM	E	62.3	D	36.4	F	111.3	E	68.5	F	303.1

Description of the proposed project: The Panola Road project (PI # 0006890) begins at the intersection of Snapfinger Woods Drive and Panola Road and ends at the intersection of Covington Highway (SR 12) and Panola Road. The project length along Panola Road for this segment is 1.0 miles.

The Panola Corridor improvement project (PI # 0006890) consists of widening Panola Road from its existing four 12' lane section to a six 12' lane section with 4' bike lanes, 5' sidewalks, and a variable 20' to 32' raised median. All crossroad intersections will be improved based on design year traffic data with improvements to approach lane configurations and turn lane lengths. Roadway widening will normally be symmetrical about existing centerlines, though asymmetrical widening will be performed where factors such as utility impacts, right of way restrictions, or geometric restrictions dictate otherwise.

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

STP-0006-00(890) proposed concept of widening Panola Road from four lanes to six lanes from Snapfinger Woods Drive to SR 12 (Covington Highway) is consistent with the regional transportation model. It is anticipated that this project will be open to traffic in 2010.

PDP Classification: Major, Existing

Federal Oversight: Full Oversight (), Exempt(X), State Funded(), or Other ()

Functional Classification: Urban Minor Arterial

U. S. Route Number(s): 278 **State Route Number(s):** 12

Traffic (AADT):

Current Year (2010): 34,640 vpd Design Year (2030): 52,020 vpd

Existing design features:

- Typical Section: 4 – 12' lanes, 12' to 24' flush median, grade shoulder

Project Concept Report Page 6
Project Numbers: STP-0006-00(890)
P. I. Numbers: 0006890
County: DeKalb

- Posted speed: 45 mph
- Minimum radius: 800 ft.
- Maximum grade: 15%
- Width of right of way: 80 -100 ft.
- Major structures: None
- Major interchanges or intersections along the project: Panola Road @ Snapfinger Woods Drive, Panola Road @ Covington Highway.
- Existing length of roadway segment:
 - Mainline: 1.0 miles
 - Side Street: 1.0 miles

Proposed Design Features:

- Proposed typical section(s):
 - 4 to 6 – 12' Lane Urban Section
 - 20' to 32' raised median, 4' bike lanes, 24" curb and gutter, 5' sidewalk with 2' grass strip. Left and right auxiliary turn lanes at major intersections.
- Proposed Design Speed Mainline: 45 mph
- Proposed Maximum Grade Mainline: 9.00% Maximum Grade Allowable: 9.00%
- Proposed Maximum Grade Side Street: 15% Maximum Grade Allowable: 9.00%.
- Proposed Maximum Grade Driveway:
 - Residential: 27% if Fill, 28% in cut (w/10' vertical curve)
 - Commercial: 11% Fill and Cut
- Proposed Minimum radius: 1864 ft.
- Right of Way
 - Width: Varies 125 feet to 170 feet
 - Easements: Temporary (X), Permanent (), Utility (), Other ().
 - Type of access control: Full (), Partial (X), By Permit (), Other ().
 - Number of parcels: 79 Number of displacements:
 - Business: 2
 - Residences: 1
 - Mobile homes: 0
 - Other: 0

- Structures:
 - Bridges: None
 - Retaining walls: various locations, all below 20' tall
- Major intersections and interchanges: Panola Road @ Snapfinger Woods Drive, Panola Road @ Covington Highway.
- Traffic control during construction: Staged construction; traffic will be maintained at all times during construction.
- 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)

As the vertical profile of side streets is developed during the design effort and as the project moves through the NEPA process, a more accurate assessment of the need for design exceptions for vertical grades and stopping sight distance will be evaluated.

- Design variances: None
- Environmental concerns: Wetland/flood plain encroachment, underground storage tanks
- 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: The following have possible utilities located within the project limits:
 - Atlanta Gas Light Company
 - BellSouth Telecommunications
 - Georgia Power
 - M.E.A.G.
 - DeKalb County Public Works Water and Sewer Division

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Project Numbers: STP-0006-00(890)
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- o Comcast
- o (Others to be determined)

Project responsibilities:

- o Design: DeKalb County
- o Right of Way Acquisition: DeKalb County
- o Relocation of Utilities: DeKalb County
- o Letting to contract: GDOT
- o Supervision of construction: GDOT
- o Providing material pits: N/A
- o Providing detours- N/A

Coordination

- Initial concept meeting date: N/A
- Concept meeting date: Sept. 20, 2005
- PAR meetings, dates and results: TBD
- FEMA, USCG, and/or TVA: TBD
- Public involvement: PHOH to be held.
- Local government comments: None to date
- Other projects in the area:
 - o STP-0006-00(880) (PI #0006880) Panola Road Segment 1
 - o STP-0006-00(879) (PI #0006879) Panola Road Segment 2
 - o STP-0005-00(905) (PI #0005905) Panola Road Segment 3
 - o NHS-0002-00(868) (PI #0002868) Panola Road Segment 4
 - o NHS-0000-00(715) (PI #0000715) I-20 HOV
- Other coordination to date: None to date
- Railroads: None

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 18 Months.
- Time to complete preliminary construction plans: 6 Months.
- Time to complete right of way plans: 3 Months.
- Time to complete the Section 404 Permit: 6 Months.
- Time to complete final construction plans: 3 Months.
- Time to complete to purchase right of way: 18 Months.
- List other major items that will affect the project schedule: Utilities: 18 Months.

Other alternates considered:

1. No build – The purpose of this project is to improve traffic capacity and to meet future volume demands. This option would not accomplish this purpose.
2. Improvements to intersections – Improve selected intersections to facilitate operation. This option would require addition of lanes within the areas of intersections to operate at a reasonable LOS, which negates efforts to minimize corridor impacts and presents problems with adding/dropping lanes between

Project Concept Report Page 9
Project Numbers: STP-0006-00(890)
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intersections.

Comments:

Attachments:

1. Cost Estimates:
 - a. Right of way
 - b. Utilities
 - c. Construction including E&C and Inflation
2. Typical sections
3. Concept Team Meeting Minutes

PRELIMINARY COST ESTIMATE

PROJECT: PANOLA ROAD CORRIDOR – SEGMENT 5 COUNTY: DeKALB
 STP-0006-00(890)
 Snapfinger Woods Drive to SR 12 (Covington Highway)

DATE: December 1, 2008 ESTIMATED LETTING DATE:

PREPARED BY: ARCADIS
 PROJECT LENGTH: 1.0 mi mainline, 0.8 mi Covington Hwy, 0.20 mi side road

PROGRAMMING PROCESS CONCEPT DEVELOPMENT DURING PROJECT DEV.

PROJECT COST	
A. RIGHT-OF-WAY:	
1. PROPERTY (Req'd R/W);	\$ 0
2. PROPERTY (Easement);	\$ 0
3. DISPLACEMENTS 0 residential @ \$200,000/ea, 5 business @ \$500,000 ea	\$ 0
4. OTHER COST (ADM./COST, INFLATION)	\$ 0
SUBTOTAL: A	\$ 0
B. REIMBURSABLE UTILITIES:	
1. RAILROAD	\$ 0
2. POWER LINES 67 minor sruct. @ \$10,000/ea, 0 major struct. @ \$100,000/ea, 12,431 lf power line @ \$5/lf	\$ 732,155
3. SERVICES EST.	\$ 200,000
SUBTOTAL: B	\$ 932,155
C. CONSTRUCTION:	
1. MAJOR STRUCTURES	
a. RETAINING WALLS 17,750 sf @ \$50/sf	\$ 887,500
b. BRIDGES 0 sf @ \$100/sf	\$ 0
c. DETOUR BRIDGES 0 sf @ \$75/sf	\$ 0
d. BOX CULVERTS 397 lf @ \$420/lf	\$ 166,740

PROJECT COST				
			SUBTOTAL: C-1	\$ 1,054,240
2. GRADING AND DRAINAGE:				
a. EARTHWORK		grading complete, EST		\$ 1,400,000
b. DRAINAGE:				
1) Cross Drain Pipe	2 ea @ \$3200/ea (1 per 700', 4 In section)			\$ 35,100
	7 ea @ \$4100/ea (1 per 700', 6 In section)			
2) Curb and Gutter	22,296 lf @ \$10.50/sf			\$ 234,108
3) Longitudinal System	2.00 mi @ \$200,000/mi			\$ 400,000
			SUBTOTAL: C-2	\$ 2,069,208
3. BASE AND PAVING:				
a. AGGREGATE BASE		109,853 Tons x \$12.65/Ton		\$ 1,389,640
b. ASPHALT PAVING: Surface		10,070 Tons x	\$ 90	\$ 906,300
	Binder	26,862 Tons x	\$ 90	\$ 2,416,770
	Base	33,566 Tons x	\$ 90	\$ 3,020,940
			Price Adjustment (using APL of \$355)	
				\$ 1,544,207
c. CONCRETE MEDIAN		11,410 sy @ 38.00/sy		\$ 433,580
d. SIDEWALK		12,387 sy @ \$25.00/sy		\$ 309,675
e. OTHER: TACK		(29,294 x \$.85/gal)		\$ 24,900
			SUBTOTAL: C-3	\$ 9,612,461
4. LUMP ITEMS:				
a. TRAFFIC CONTROL		\$500,000/mi x 2.0 mi		\$ 1,000,000
b. CLEARING AND GRUBBING		\$6,000/ac x 12.32 ac		\$ 73,920
c. LANDSCAPING		N/A		\$ 0
d. EROSION CONTROL		\$80,000/mi x 2.0 mi		\$ 160,000
e. DETOURS		N/A		\$ 0
			SUBTOTAL: C-4	\$ 1,233,920

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PROJECT COST		
5. MISCELLANEOUS:		
a. LIGHTING	\$100,000/mi x 1.91 mi	\$ 191,000
b. SIGNING – STRIPING	\$40,000/mi x 2.00 mi	\$ 80,000
c. GUARDRAIL	(8,903 lf x \$11/lf)	\$ 97,933
d. MEDIAN BARRIER	N/A	\$ 0
SUBTOTAL: C-5		\$ 368,933
6. SIGNAL MODIFICATION: 4 Signals @ \$110,000 ea Fiberoptic - \$150,000 x 1.29 mi		SUBTOTAL: C-6 \$ 633,500

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		
	\$	0
B. REIMBURSABLE UTILITIES <i>(No Reimbursements)</i>		
	\$	932,155
C. CONSTRUCTION		
1. MAJOR STRUCTURES	\$	1,054,240
2. GRADING AND DRAINAGE	\$	2,069,208
3. BASE AND PAVING	\$	9,612,461
4. LUMP ITEMS	\$	1,233,920
5. MISCELLANEOUS	\$	368,933
6. SIGNAL MODIFICATION	\$	633,500
SUBTOTAL CONSTRUCTION COST		\$ 14,972,262
INFLATION		\$
E. & C. (4%) Major Widening		\$ 598,890
NUMBER OF YEARS		
CONSTRUCTION COST		\$ 15,571,152
TOTAL CONSTRUCTION COST		\$ 16,503,307

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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 May 26 through May 29, 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
Vinay Uchil, PE	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 Parsons Engineering. 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 safety**
 - **Improve Level of Service**
 - **Project Basic Functions**
 - **Separate pedestrians and cyclist**
 - **Improve traffic operations**
 - **Increase capacity**
- **Speculation Phase** - The VE team performed a brainstorming session to identify ideas that might help meet the project objectives:
 - **Improve and control access**
 - **Reduce ROW required**
 - **Reduce and balance earthwork**
 - **Eliminate non-functional work**
 - **Reduce total property taking**

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

CSSTP-0005-00(905) – P.I. No. 0005905

CSSTP-0006-00(879) – P.I. No. 0006879

CSSTP-0006-00(890) – P.I. No. 0006890

*Panola Road Widening and Rehabilitation
DeKalb County*

May 26-29, 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

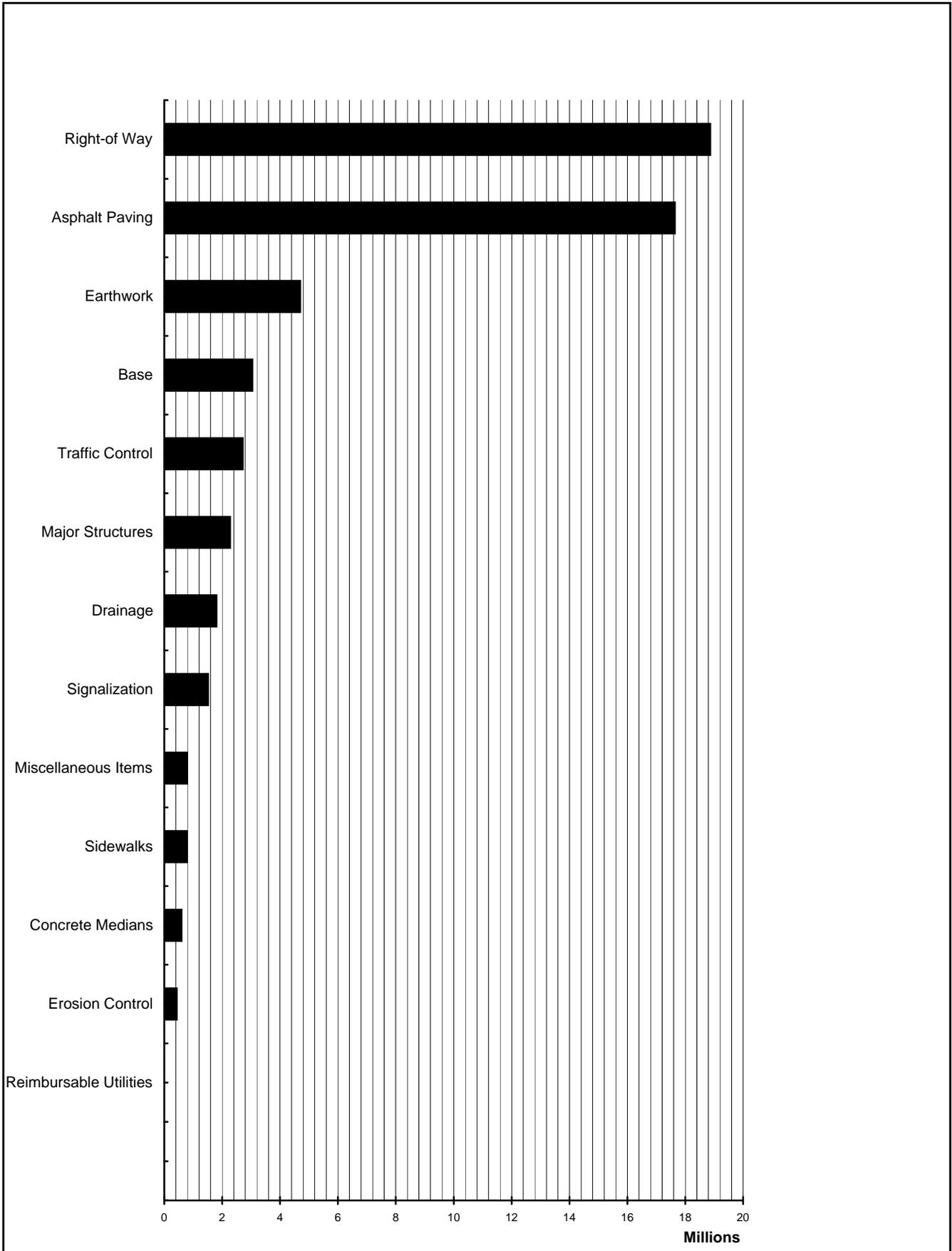
- Continue developing Alternative Ideas
- Continue developing Design Suggestions
- Prepare for presentation to Owners and Designers

Day Four

8:00-9:00 Prepare Presentation

9:00-10:00 VE Team Presentation

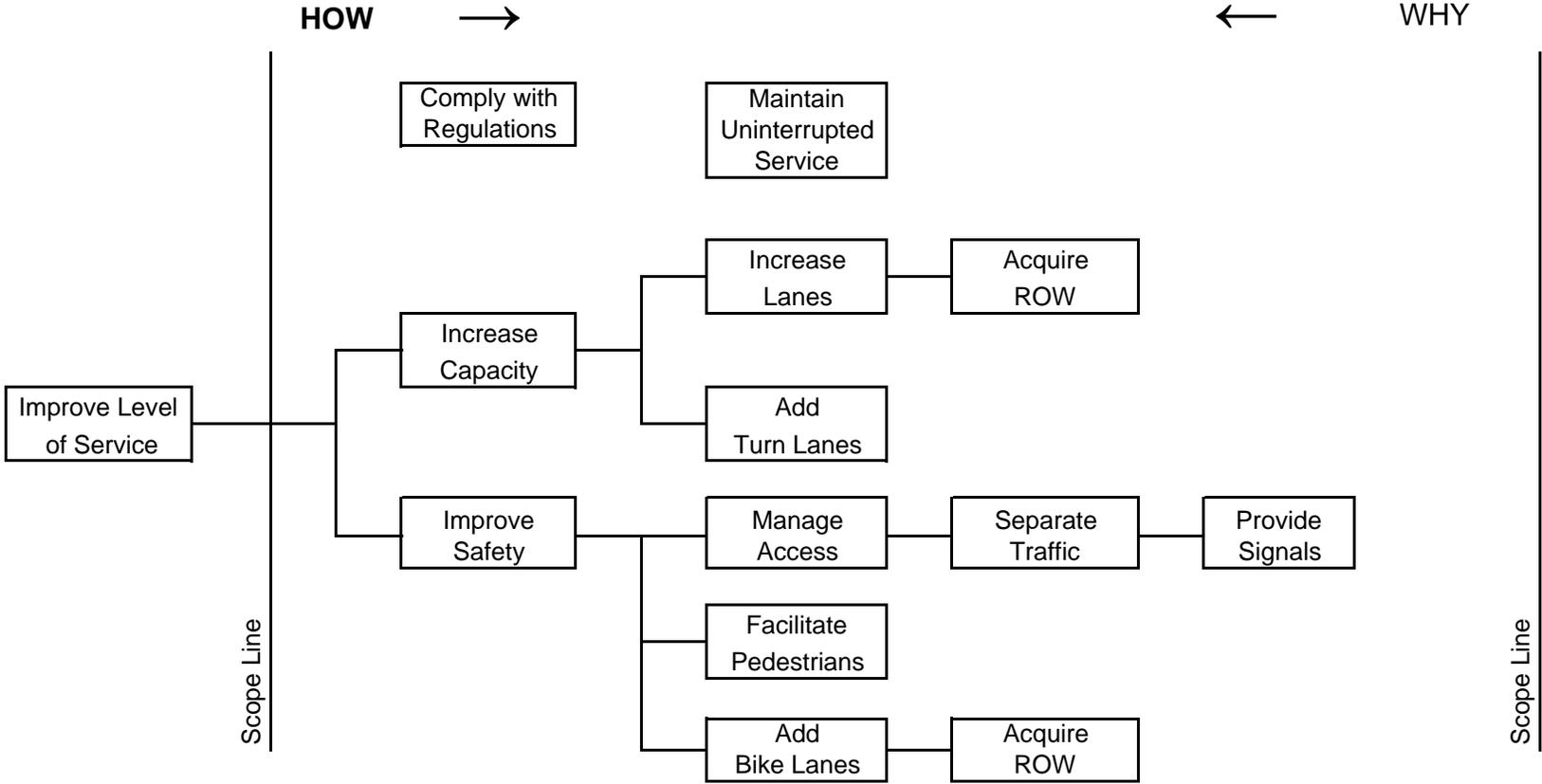
Project: Panola Road Widening and Rehabilitation, Dekalb County



DeKalb County
Panola Road Widening and Rehabilitation



FAST DIAGRAM



DESIGNER PRESENTATION



MEETING PARTICIPANTS

Geogia Department of Transportation		May 26, 2009	
CSSTP-0005-00(905)	P.I. No. 0005905		
CSSTP-0006-00(879)	P.I. No. 0006879		
CSSTP-0006-00(890)	P.I. No. 0006890		
County: DeKalb			
NAME	ORGANIZATION & TITLE	E-MAIL	PHONE
Lisa Myers	 GDOT - Engineering Services	lmyers@dot.ga.gov	404-631-1770
Ken Werho	 GDOT-Traffic Operations	kwerho@dot.ga.gov	404-635-8144
Ron Wishon	 GDOT-Engineering Services	rwishon@dot.ga.gov	404-631-1753
Matt Sanders	 GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
Mike Lobdell	 GDOT-District 7	mlobdell@dot.ga.gov	770-986-1157
Les Thomas, PE, CVS	 PBS&J	lmthomas@pbsj.com	678-677-6420
Luke Clarke, PE, AVS	 PBS&J	lwclarke@pbsj.com	205-946-4615
Vinay Uchil, PE	 PBS&J	vuchil@pbsj.com	404-444-9619
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Koushik Arunachalam	 ARCADIS	koushik.arunachalam@arcadis-us.com	770-631-8666

VE TEAM PRESENTATION



MEETING PARTICIPANTS

Georgia Department of Transportation			May 29, 2009	
CSSTP-0005-00(905)		P.I. No. 0005905		
CSSTP-0006-00(879)		P.I. No. 0006879		
CSSTP-0006-00(890)		P.I. No. 0006890		
DeKalb County				
NAME	ORGANIZATION & TITLE		E-MAIL	PHONE
Lisa Myers		GDOT - Engineering Services	lmyers@dot.ga.gov	404-631-1770
Matt Sanders		GDOT-Engineering Services	msanders@dot.ga.gov	404-631-1752
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Vinay Uchil, PE		PBS&J	vuchil@pbsj.com	404-444-9619
Nikki Reuthinger		PBS&J	ngreuthinger@pbsj.com	770-933-0280
Kevin M. McKeen, PE		Arcadis	kevin.mckeen@arcadis-us.com	770-431-8666

CREATIVE IDEA LISTING



**PROJECT: Georgia Department of Transportation
 CSSTP-0005-00(905) – P.I. No. 0005905
 CSSTP-0006-00(879) – P.I. No. 0006879
 CSSTP-0006-00(890) – P.I. No. 0006890
 Panola Road Widening and Rehabilitation
 DeKalb County**

SHEET NO.: 1 of 2

NO.	IDEA DESCRIPTION	RATING
SEGMENT 2 - CSSTP-0006-00(879)		
RD-1	Eliminate median opening at the intersection of Panola Road and Oak Tree Trail	4
RD-2	Prohibit thru traffic on Old Panola Rd. (Big Miller Grove Way)	1
RD-3	Use a 5-lane road in-lieu of 4-lane road with medians	2
RD-4	Use multi-use trails in-lieu of bike lanes and sidewalks	3
RD-5	Eliminate signal and median opening at Winslow Crossing	2
RD-6	Eliminate southbound left turn lane at the intersection of Panola Road and Old Panola Road (Make Old Panola Road Right-In / Right-Out)	4
RD-7	Use an off set intersection in-lieu of re-aligning at Winslow Crossing	2
RD-8	Extend the Salem Road Westbound Widening to the existing 4-lane section at Salem Hills Drive	4
RD-9	Add capacity to Browns Mill Road	4
RD-10	Signalize the Oak Tree Trail intersection	4
SEGMENT 3 – CSSTP-0005-00(905)		
RD-11	Delete re-alignment of Fairington Road	4
RD-12	Increase right turn radius on Fairington Road	Included in RD-11
RD-13	Postpone sidewalks and bike lanes from Fairington Road to I-20	Included in RD 14
RD-14	Postpone Panola road widening work between Fairington road and I-20 and include in Section 4	5
RD-15	See RD-4	3

**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**

