



May 4, 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 I-575 Resurfacing
Project Nos.: CSNHS-M003-00(967) – P.I. No. M003967
Cherokee and Cobb Counties

This Value Engineering Study, which was performed on April 30, 2009, identified **5 alternatives** of which **3 are recommended for implementation**. We believe that these **ideas** 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. CSNHS-M003-00(967) – P.I. No. M003967

Resurfacing of I-575

Cherokee and Cobb Counties

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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:

- Comply with Standards
- Need to improve safety
- Re-establish rideability

CONCLUSIONS AND RECOMMENDATIONS

During the speculation phase the VE Team identified **5 alternatives** 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, the team had selected **3 of the alternatives for final development**. These recommendations are presented in the **Study Results**.

Value Analysis Project Recommendation



PROJECT:	Georgia Department of Transportation CSNHS-M003-00(967) – P.I. No. M003967 Cherokee and Cobb Counties I-575 Resurfacing	ALTERNATIVE NO.:	1
DESCRIPTION:	Allow limited daytime lane closures to enable ramp overlay construction on the weekends	SHEET NO.:	1 of 1

Original Design:

The original design (per the FPR of 04/15/2009) prohibits any lane closures to from 6 a.m. to 7 p.m. Monday thru Sunday.

Alternative:

The alternative would allow a daytime single lane closure on the weekend for ramp construction only.

Opportunities:

- Improve project safety
- Reduce construction time

Risks:

- Increased disruption of traffic

Technical Discussion:

The combination of reduced visibility, narrowed lanes (on the ramp), an increased number of impaired drivers and a complex decision point will create a more hazardous condition during night ramp construction. The ramp and the ramp gore is also an irregular area that requires more attention, more “hand work” and will be more difficult to construct and expose more workers to traffic. By allowing a single lane closure during daylight hours on the weekend, the safety of the work crews and the traveling public could both be increased.

Value Analysis Project Recommendation



PROJECT:	Georgia Department of Transportation CSNHS-M003-00(967) – P.I. No. M003967 Cherokee and Cobb Counties I-575 Resurfacing	ALTERNATIVE NO.:	2
DESCRIPTION:	Extend “working time” for paving operations.	SHEET NO.:	1 of 1

Original Design:

The original design calls for the project to be let, have a contract life of 12 months, and all paving operations are to be completed within 90 days of paving operations commencing.

Alternative:

The alternative would extend or expand the contract working time to facilitate the paving operations outlined in Section 108.08(c)3 of the contract Special Provisions.

Opportunities:

- Adjusts contract time to compensate for more stringent lane closure restrictions

Risks:

- None identified

Technical Discussion:

The alternative proposes adjusting the provision contained on Section 108.08(C.)3, stating that the *“Failure to complete all paving operations within 90 calendar days from the start date of any of the paving operations, will result in the assessment of Liquidated Damages” at a rate of \$500.00 per calendar day.* It is the understanding of the team that the contractor has 12 months to complete the project, with the 90 day window for completing paving operations to be chosen by the contractor following the notice to proceed. Following review of the draft FFPR, the VE team suggests revisiting the inclusion of this clause due to the implementation of more stringent lane closures. The FFPR recommends no daytime lane closures at any point during the project, including ramps or shoulders. This has the effect of limiting lane closures from 7:00 PM to 6:00 AM, 7 days per week. This allows 77 hours of work weekly. The prior arrangement allowing weekend lane closures on the mainline would allow work to commence for 103 hours weekly, which includes an additional 13 hours of lane closures permitted on each Saturday and Sunday.

Another factor to consider is that restriction to nighttime closures only will make placement of the thin OGFC lift more difficult due to ambient temperature restrictions in placement operations. The SMA will be placed in a thicker lift, reducing the likelihood of ambient temperature placement restrictions.

Finally, there are approximately 159 lane miles to be milled, and approximately 238 lane miles to be paved counting two pulls on each lane of the mainline for SMA and OGFC placement following the milling operation, as well as the mill and placement of Superpave on the inside and outside shoulders. The contractor will be restricted to a two-mile lane closure in each direction, requiring substantial nightly operations to establish the work zone before beginning operations, as well as removal of the closure to turn traffic, reducing actual time for milling and paving operations.

Value Analysis Project Recommendation



PROJECT:	Georgia Department of Transportation CSNHS-M003-00(967) – P.I. No. M003967 Cherokee and Cobb Counties I-575 Resurfacing	ALTERNATIVE NO.:	5
DESCRIPTION:	Mill and leave open as desired to allow continuous shoulder resurfacing.	SHEET NO.:	1 of 1

Original Design:

The original design states unless modified by special condition, a milled surface on any asphaltic concrete surface shall not be allowed to remain open for a period of time that exceeds thirty (30) days.

Alternative:

Allow milled shoulders to remain open for periods of time to exceed 30 days as permitted in 150.11.B.6

Opportunities:

- One continuous pull during resurfacing
- Eliminate construction joints

Risks:

- Shoulder being resurfaced in shorter pulls with several construction joints

Technical Discussion:

The alternative would modify the contract by special condition to allow milled shoulders to remain open for a period of time exceeding 30 days permitting the contractor to perform a continuous shoulder resurfacing for the entire North and South sections of highway under construction.

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
- VE Report

VALUE ENGINEERING STUDY AGENDA

for

Georgia Department of Transportation

CSNHS-M003-00(967) – P.I. No. M003967

***Cherokee and Cobb Counties
I-575 Resurfacing***

April 30, 2009

Pre-Workshop Activities

VE Team Leader organizes study, coordinates with the Owner and Designer about the project objectives and materials. The VE Team receives and reviews all project documents.

8:30-9:00 Project Overview (Information Phase)

- Introduction of participants
- Presentation of the project by GDOT
 - Current Construction Completion Schedule
 - Project Cost Estimate and Budget Constraints
- Discussion, questions and answers
- Overview of the VE Process and Agenda – Workshop goals & project goals

9:00-10:00 VE Team reviews project (Information Phase)

- Review GDOT's presentation
- Review Cost Estimate
- Review plans

10:00-10:30 Function Analysis Phase

- Identify basic and secondary functions
- Complete Function Matrix/FAST Diagram

10:30-11:30 Creative Phase

- Brainstorming of alternative ideas

11:30-12:30 Evaluation Phase

- Establish criteria for evaluation
- Rank ideas
- Identify "best" ideas for development
- Identify a "champion" for each idea to be developed

1:30-5:00 Development Phase

- Develop alternative ideas with assessment of original design and write up new alternatives including:
 - Opportunities & risks
 - Technical Discussion

Post-Workshop Activities

Team Leader prepares and writes report. The team members review report. Then the report is published and delivered to the client.

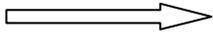
(FAST DIAGRAM)

Georgia Department of Transportation

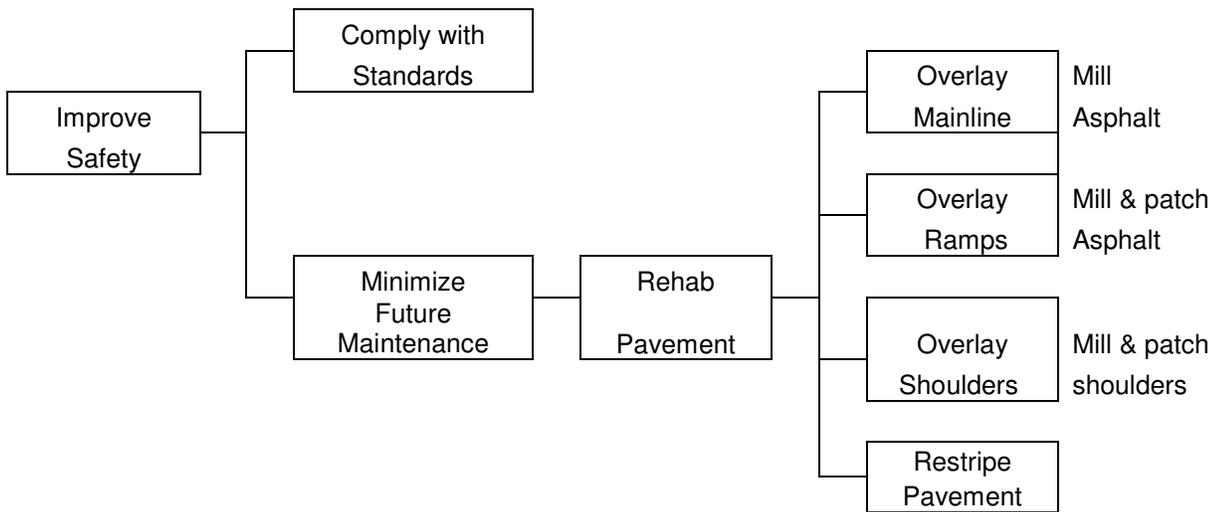
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**I-575 Resurfacing
Cherokee and Cobb Counties**

HOW



WHY



Value Engineering Study



MEETING PARTICIPANTS

Georgia Department of Transportation		April 30, 2009	
CSNHS-M003-00(967) - P.I. No. M003967 - Cherokee and Cobb Counties			
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