

Value Engineering Study FHWA Summary Report

Arkansas
Division/State

2008 (October 1, 2007 - September 30, 2008)
Federal Fiscal Year

Part 1 - Value Engineering Program

	Yes	No
1a. Does your DOT have a formal VE program?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1b. Briefly describe your DOT's documented VE policies or procedures.	AHTD continues to follow FHWA's VE guidelines for delivering the VE program. All projects that meet the VE criteria are reviewed and VE teams are assembled to perform the VE studies. The VE recommendations are reviewed by each relevant division. Subsequently, the VE report is presented to the VE Review Committee for implementation recommendation. The recommendation then is presented to the Deputy Director and Chief Engineer for final approval. Approved recommendation is then incorporated into design of the project.	
1c. If available, provide the current link to your DOT's VE-related Web sites.	Not available for the reporting period.	
2a. Does your DOT monitor the performance of the VE Program?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2b. Does your DOT evaluate and report on the performance of the VE Program?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2c. Does your DOT utilize performance measures to assess the effectiveness of the VE program and initiatives?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2d. If the answer to 2b is "Yes", briefly describe.	AHTD conducts an annual evaluation of the VE program which generally consists of an analysis on return on investment, percent project costs saved, recommendation acceptance rate, average cost saving per recommendation, and VECP acceptance rate.	
2e. Does your DOT monitor and oversee VE studies conducted by local authorities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2f. If the answer to 2e is "Yes", please briefly describe.	If the project meets the value engineering criteria and is funded in part with federal funds, AHTD will monitor and oversee VE studies. However, no VE studies have been conducted by local authorities to date.	
3a. Describe any successful practices your DOT uses in the delivery of the VE Program.	AHTD often uses trained staff with expertise in their area to perform VE studies. In addition, training sessions and VE studies sometimes are combined to minimize the costs for training and conducting studies.	
3b. Describe any successful practices your DOT uses to encourage more successful implementation of VECPs during construction.	For all projects with estimated construction costs over \$2 million, a special provision (SP) is included in the construction documents that encourages the Contractor to submit a Value Engineering Proposal (VEP) at any time after execution of the Contract. As outlined in the SP, the Contractor will be paid by AHTD 50% of the actual savings as reflected by the difference between the cost of the revised work and the cost of the related construction required by the original Contract computed at Contract bid prices if the VEP is accepted.	

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4a. Identify the typical project factors and associated measures that your DOT requires to be analyzed on VE studies. Examples: Factor: Safety/Traffic Flow; Measure: Crashes/Delay.

AHTD does not require specific project factors for VE studies. However, all factors are open for discussion.

4b. Does your DOT incorporate a Life-Cycle Cost Analysis during the VE study?



4c. If the answer to 4b is "Yes", please explain.

Life cycle cost analysis is generally utilized when determining costs for different types of pavement or structural elements. The study usually incorporates an independently conducted life cycle cost analysis.

4d. Describe when VE studies are generally conducted by your DOT for design-bid-build projects.

VE studies are generally conducted during the preliminary design phase for design-bid-build projects.

4e. Describe how and when are VE studies are generally conducted by your DOT for design-build projects?

No design-build projects to date.

4f. If your DOT conducts multiple VE studies on Major Projects, describe the points in the project development process where the studies occur.

No Major Projects to date.

5. Briefly describe a successful study completed by your DOT in FY 2008.

The most successful VE study this year is the I-430/I-630 Interchange Modification project (Job 061198). The estimated project cost is \$97 million. The \$6.5 million implemented VE recommendations resulted in a rate of return of 859:1.

6. Briefly describe any special studies conducted by your DOT in FY 2008.

None.

7. Describe a unique or innovative VE recommendation or VE Change Proposal that provided a significant benefit to the project on which it was implemented.

For the I-430/I-630 Interchange Modification project (Job No. 061198), a traffic microsimulation model (VISSIM) was utilized to determine the feasibility of eliminating the I-430 northbound to Financial Parkway westbound bridge. The recommendation to eliminate the bridge was implemented with a cost savings of \$3.8 million.

8a. Number of individuals received VE training in FY 2008.

- i. Number of State DOT Employees Trained
- ii. Number of FHWA Employees Trained
- iii. Number of Others Trained

28
1
0

28
1
0

Total number trained:

29

8b. Describe your State DOT's general approach to conducting VE training.

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AHTD generally utilizes the NHI course (course No. FHWA-NHI-134005).

Part 2 - Summary of VE Studies

	In-house	Consultant	Total
9a. Number of VE studies completed in FY 2008:	5	0	5
9b. Completed Studies in FY 2008 that were required by Federal Law:	5	0	5
9c. Number of anticipated studies to be completed during FY2009	2	0	2
Number of anticipated studies to be completed during FY2010	2	0	2
10a. Costs associated with conducting the VE studies	\$52,350	\$0	\$52,350
10b. Estimated cost of projects studied this year:	\$537,950,000	\$0	\$537,950,000
11a. Number of proposed VE recommendations	30	0	30
11b. Number of Approved VE recommendations	10	0	10
12a. Value of proposed VE recommendations	\$45,181,490	\$0	\$45,181,490
12b. Value of all approved VE recommendations	\$9,927,948	\$0	\$9,927,948
13a. Number of VECP submitted this year:		2	2
13b. Number of VECP approved this year:		2	2
14a. Value of VECP submitted this year:		\$33,265	\$33,265
14b. Value of VECP approved this year:		\$33,265	\$33,265

Part 3 - Benefits of VE Studies and VE Change Proposals

15. Number of the approved VE Recommendations according to fictional benefit

Safety	1	1
Operations	1	1
Environment	4	4
Construction	1	1
Other	3	3

16. Number of the approved VECPs according to functional benefit

Safety		0
Operations		0
Environment		0
Construction	2	2
Other		0

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Analysis of Results

Return On Investment	=	$\frac{\text{Value of Approved Recommendations}}{\text{Costs of Studies Finalized}}$	190
% of Project Costs Saved	=	$\frac{\text{Value of Approved}}{\text{Project Costs of Studies Finalized}}$	2%
Recommendation Acceptance Rate	=	$\frac{\text{\# of Approved}}{\text{\# of Proposed Recommendations}}$	33%
Average Cost Savings per Recommendation	=	$\frac{\text{Total Value of Recommendations Finalized this}}{\text{Total \# of Recommendations Finalized this Year}}$	\$1,506,050
VECP Acceptance Rate	=	$\frac{\text{\# of Approved VECP}}{\text{\# of Submitted VECP}}$	100%