Part 1 - Value Engineering Program

1a. Does your DOT have a formalized VE program that includes *(Select all that apply)*:

- An official VE Policy
- A designated VE Coordinator
- A VE Training Plan
- No formalized VE Program currently exists at the DOT

1b. If your DOT's VE Program has an official VE Policy, indicate which of the following elements are included *(Select all that apply)*:

- Processes to identify projects for VE studies
- Processes to assure that required VE studies are completed
- Processes to conduct VE studies
- Timing of VE studies
- Processes to review/accept/reject VE recommendations
- Processes for tracking and monitoring VE studies
- Processes for tracking and monitoring implementation of VE recommendations
- No official VE Policy is in place, or the general requirements of 23 CFR 627 are followed

Comments:

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. Provide links to any of your DOT's currently available, VE-related websites, such as:

- General VE Program Information
- Official VE Policy
- General VE Processes and procedures
- Other

http://www.arkansashighways.com/value_engineering_program/value_engineering_program.aspx

2a. Does your DOT:

- Monitor the performance of the VE Program?
- Evaluate and report on the performance of the VE Program?

2b. Does your DOT utilize performance measures besides those included in the FHWA reporting requirements, to assess the effectiveness of the VE program?

- Yes

2c. 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.
3a. Describe any practices your DOT uses to make the application of VE more successful.

The Statewide Transportation Improvement Program (STIP) is utilized to develop the VE project list and the project progress is monitored closely to ensure timeliness of the VE studies. In addition, trained staff with expertise in their area are often utilized 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.

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. Describe how your DOT incorporates Life-Cycle Cost Analyses during the VE.

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.

4c. What number of the total number of VE studies completed in FY 2009 occurred in the following:

- Planning Phase
- Environmental Phase
- Up to 30% Design Phase
- 30-60% Design Phase: 2
- 60% or later Design Phase: 1

Provide comments describing your experience regarding the timing of the VE studies:

VE studies are generally more successful when conducted during the 30-60% design phase for design-bid-build projects.

4d. For design-build projects, identify the timetable that best describes when VE studies are typically conducted by your DOT. Select one of the followings:

- Planning/scoping
- Prior to Issuance of RFP
- After Issuance of RFP
- State DOT does NOT currently use design-build

4e. 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 2009.

The most successful VE study this year is the Highway 82 widening (Fairview - Mississippi Bridge) project (Job R20098). The estimated project cost is $28.9 million. The $2.4 million implemented VE recommendations resulted in a rate of return of 373:1.

6. Briefly describe any special studies conducted by your DOT in FY 2009.

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.

One of implemented VE recommendations is to utilize guardrails and steeper sideslopes to reduce the project footprint through a major floodplain area, therefore reduce environmental impact for the project. This recommendation is also considered applicable in a future project through the same floodplain area.

8a. Enter the number of State DOT, FHWA, and other individuals receiving VE training in FY 2009.

i. Number of State DOT Employees Trained 0

ii. Number of FHWA Employees Trained 0

iii. Number of Others Trained 0

Total number trained: 0

8b. Identify the method(s) that best describe(s) your DOT’s approach to conducting VE training and education (Select all that apply):

- Short-duration orientation presentations for agency leadership
- Short-duration orientation presentations for technical staff
- NHI VE Workshop
- SAVE Mod I training course
- SAVE Mod II training course
- Other

Part 2 - Summary of VE Studies

<table>
<thead>
<tr>
<th></th>
<th>In-house</th>
<th>Consultant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9a. Total # of studies completed in FY 2009:</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>9b. # of Studies Completed in FY 2009 that were required by Federal Law:</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>9c. # of Studies Completed in FY 2009 that were specially designated by the Secretary:</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9d. # of Studies Completed in FY 2009 for projects that received funding from American Recovery and Reinvestment Act (ARRA) of 2009:</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9e. # of specially designated Studies for project that received ARRA funding:</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>9f. Anticipated # of Studies to be Completed during FY 2010 and 2011.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2010</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>FY 2011</td>
<td>2</td>
<td>2</td>
<td>4</td>
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<tr>
<td>10a. Costs associated with conducting the VE studies</td>
<td>$23,351</td>
<td>$0</td>
<td>$23,351</td>
</tr>
<tr>
<td>10b. Estimated cost of projects studied this year:</td>
<td>$149,700,000</td>
<td>$0</td>
<td>$149,700,000</td>
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<tr>
<td>11a. Number of proposed VE recommendations</td>
<td>13</td>
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<td>13</td>
</tr>
<tr>
<td>11b. Number of Approved VE recommendations</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>12a. Value of proposed VE recommendations</td>
<td>$33,346,414</td>
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<td>$33,346,414</td>
</tr>
</tbody>
</table>
12b. Value of all approved VE recommendations  $5,537,505  $0  $5,537,505

13a. Number of VECP submitted this year:  

13b. Number of VECP approved this year:  

14a. Value of VECP submitted this year:  $68,127  $68,127

14b. Value of VECP approved this year:  $68,127  $68,127

Part 3 - Benefits of VE Studies and VE Change Proposals

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

<table>
<thead>
<tr>
<th>Functional Benefit</th>
<th>Safety</th>
<th>Operations</th>
<th>Environment</th>
<th>Construction</th>
<th>Other</th>
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<tbody>
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<td>2</td>
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<td>2</td>
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</tbody>
</table>

16. Number of the approved VECPs according to functional benefit

<table>
<thead>
<tr>
<th>Functional Benefit</th>
<th>Safety</th>
<th>Operations</th>
<th>Environment</th>
<th>Construction</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Analysis of Results

- **Return On Investment**  
  \[
  \text{Return On Investment} = \frac{\text{Value of Approved Recommendations}}{\text{Costs of Studies Finalized}} = \frac{237}{237} = 1
  \]

- **% of Project Costs Saved**  
  \[
  \text{% of Project Costs Saved} = \frac{\text{Value of Approved Recommendations}}{\text{Project Costs of Studies Finalized}} = \frac{237}{237} = 100\%
  \]

- **Recommendation Acceptance Rate**  
  \[
  \text{Recommendation Acceptance Rate} = \frac{\text{# of Approved Recommendations}}{\text{# of Proposed Recommendations}} = \frac{2}{2} = 100\%
  \]

- **Average Cost Savings per Recommendation**  
  \[
  \text{Average Cost Savings per Recommendation} = \frac{\text{Total Value of Recommendations Finalized this Year}}{\text{Total # of Recommendations Finalized this Year}} = \frac{2,565,109}{2,565,109} = 1
  \]

- **VECP Acceptance Rate**  
  \[
  \text{VECP Acceptance Rate} = \frac{\text{# of Approved VECP}}{\text{# of Submitted VECP}} = \frac{2}{2} = 100\%
  \]